0054297

HNF-EP-0182-151

Waste Tank Summary Report for Month Ending October 31, 2000

Prepared for the U.S. Department of Energy
Assistant Secretary for Environmental Management

CH2MHILL
Hanford Group, Inc.

Richland, Washington

Contractor for the U.S. Department of Energy
Office of River Protection under Contract DE-AC06-99RL14047

This report has been reproduced from the best available copy.
Available in paper copy and microfiche.

Available electronically at
http://www.doe.gov/bridge. Available for a processing fee to the U.S. Department of Energy and its contractors, in paper, from:
U.S. Department of Energy
Office of Scientific and Technical Information
P.O. Box 62
Oak Ridge, TN 37831-0062
phone: 865-576-8401
fax: 865-576-5728
email: reports@adonis.osti.gov(423) 576-8401

Available for sale to the public, in paper, from:
U.S. Department of Commerce
National Technical Information Service
5285 Port Royal Road
Springfield, VA 22161
Phone: 800-553-6847
fax: 703-605-6900
email: orders@ ntis.fedworld.gov
online ordering:
http://www.ntis.gov/ordering.htm

Printed in the United States of America

HNF-EP-0182-151

Waste Tank Summary Report for Month Ending October 31, 2000

B. M. Hanlon
CH2M HILL Hanford Group, Inc.

Date Published
December 2000

Prepared for the U.S. Department of Energy
Assistant Secretary for Environmental Management

CH2MHILL
Hanford Group, Inc.

P. O. Box 1500
Richland, Washington

Contractor for the U.S. Department of Energy
Office of River Protection under Contract DE-AC06-99RL14047

This page intentionally left blank.

APPROVALS

Prepared by: B. M. Hanlon — 11/21/00
B. M. Hanlon
Date

Responsible Manager: John S. Garfield — 12-19-00
John S. Garfield, Manager
Inventory and Flowsheet Engineering
Date

This page intentionally left blank.

WASTE TANK SUMMARY REPORT

B. M. Hanlon

ABSTRACT

This report is the official inventory for radioactive waste stored in underground tanks in the 200 Areas at the Hanford Site. Data that depict the status of stored radioactive waste and tank vessel integrity are contained within the report. This report provides data on each of the existing 177 large underground waste storage tanks and 63 smaller miscellaneous underground storage tanks and special surveillance facilities, and supplemental information regarding tank surveillance anomalies and ongoing investigations. This report is intended to meet the requirement of U. S. Department of Energy-Richland Operations Office Order 435.1 (DOE-RL, July 1999, Radioactive Waste Management, U. S. Department of Energy-Richland Operations Office, Richland, Washington) requiring the reporting of waste inventories and space utilization for Hanford Tank Farm tanks.

This page intentionally left blank.

TABLE OF CONTENTS

METRIC CONVERSION CHART		
1 inch	=	2.54 centimeters
1 foot	=	30.48 centimeters
1 gallon	=	3.80 liters
1 ton	=	0.90 metric tons

$$°F = \left(\frac{9}{5}°C\right) + 32$$

1 Btu/h = 2.930711 E-01 watts
(International Table)

WASTE TANK SUMMARY REPORT FOR MONTH ENDING OCTOBER 31, 2000

Note: Changes from the previous month are in bold print.

I. WASTE TANK STATUS

Category	Quantity	Date of Last Change
Double-Shell Tanks[b]	28 double-shell	10/86
Single-Shell Tanks	149 single-shell	1966
Assumed Leaker Tanks	67 single-shell	07/93
Sound Tanks	28 double-shell 82 single-shell	1986 07/93
Interim Stabilized Tanks[a]	125 single-shell	09/00
Not Interim Stabilized[c]	24 single-shell	09/00
Intrusion Prevention Completed	108 single-shell	09/96
Controlled, Clean, and Stable[f]	36 single-shell	09/96
Watch List Tanks[d] Total	19 single-shell 6 double-shell 25 tanks	09/00[e] 06/93

[a] Of the 125 tanks classified as Interim Stabilized, 65 are listed as Assumed Leakers. (See Table G-1)

[b] Six double-shell tanks are currently included on the Hydrogen Watch List and are thus prohibited from receiving waste in accordance with "Safety Measures for Waste Tanks at Hanford Nuclear Reservation," Section 3137 of the *National Defense Authorization Act for Fiscal Year 1991*, November 5, 1990, Public Law 101-510.

[c] Two of these tanks are Assumed Leakers (BY-105, BY-106). (See Table F-1)

[d] See Appendix D for more information on Watch List Tanks.

[e] Dates for the Watch List tanks are "officially added to or removed from the Watch List" dates. Eighteen tanks were removed from the Organic Watch List in December 1998; the last two tanks (C-102 and C-103) were removed from the Organic Watch List in August 2000. In December 1999, tank C-106 was removed from the High Heat Load Watch List. Only the Hydrogen Watch List remains.

[f] The TY tank farm was officially declared Controlled, Clean, and Stable (CCS) in March 1996. The TX tank farm and BX tank farms were declared CCS in September 1996.

II. WASTE TANK INVESTIGATIONS

This section includes all single- or double-shell tanks or catch tanks which are showing surface level or interstitial liquid level (ILL) decreases, or drywell radiation level increases in excess of established criteria.

A. Assumed Leakers or Assumed Re-leakers: (See Appendix H for definition of "Re-leaker")

This section includes all single- or double-shell tanks or catch tanks for which an off-normal or unusual occurrence report has been issued, or for which a waste tank investigation is in progress, for assumed leaks or re-leaks.

Tanks/catch tanks will remain on this list until either a) completion of Interim Stabilization, b) the updated occurrence report indicates that the tank/catch tank is not an assumed leaker, or c) the investigation is completed.

There are no formal leak investigations in progress. There are no tanks for which an off-normal or unusual occurrence report has been issued for assumed leaks or re-leaks.

B. Tanks with increases indicating possible intrusions:

This section includes all single-shell tanks and related receiver tanks for which the surveillance data show that the surface level or ILL has met or exceeded the increase criteria, or are still being investigated.

Candidate Intrusion List: Increase criteria in the following tanks indicate possible intrusions.

Tank 241-B-202
Tank 241-BX-101
Tank 241-BX-103
Tank 241-BY-103

The surveillance data was last reviewed on the tanks listed as having probable liquid intrusions: Memo 74B20-99-045, dated November 22, 1999.

Catch Tank 241-AX-152: The liquid level in this catch tank was steady around 66.75 inches from the startup of Project W-030, "Tank Farm Ventilation System," in March 1998 until late August 1998. The level then began to decrease. The October 1998 reading of 65 inches is 1.75 inches below the summer average. This is an active catch tank, routinely pumped, and deviations from baseline are not applicable per OSD-00031. The decrease represents a significant change in trend and it is apparent that tank conditions changed around the end of August 1998.

Resolution Status: Discrepancy Report #98-853 was issued on November 4, 1998. One possible cause under investigation is a change in flow path, causing an increase in evaporation. The tank was pumped down to 2.25 inches on November 13, 1998. Since that time the level has decreased to 0.00 inches. The Discrepancy Report will remain open until an engineering investigation is complete.

The discrepancy remained unresolved, and there was a renewed interest in this tank because of its importance for deactivation of the 702A ventilation system to prepare it for Decommissioning and Deactivation and for collection of drainage from AX-155. In the absence of an agreement on a leak test, management requested a leak assessment. The leak assessment team met April 20, 2000, to review the data. Observations inconsistent with a conclusion that the catch tank was leaking and scanty data prompted the leak assessment team to defer a decision pending availability of additional data - primarily tank temperature and a more sensitive level measuring device to shorten the necessary leak test time. A Leak Test Recommendation was issued May 8, 2000. The leak test involves adding water to the tank and measuring the level drop, to support tank integrity assessment. The addition of AX-152 integrity pressure test water to AY-101 is being re-evaluated because the actual volume of water added to the DST system (approximately 50,000 gallons) is considerably more than the volume original evaluated. The increased volume is necessary because of the siphon type pump in the catch tank.

Leak assessment is currently being performed per Work Package 2E-00-193. Water was added in August 2000 which raised the level to 10-3/4 inches. **The level was 10 inches on October 31, 2000.**

Work Package 2E-00-194 is on the schedule to fill the catch tank to 80% capacity (approximately 108 inches) and perform a 40-hour leak test.

Because the ENRAF will not be installed, Work Package ES-99-00133 has been revised to allow flammable gas sampling through the existing manual tape; sampling is expected to take place in November 2000.

III. SURVEILLANCE AND WASTE TANK STATUS HIGHLIGHTS

1. Single-Shell Tanks Saltwell Jet Pumping (See Table A-6 footnotes for further information)

Tank 241-A-101 - Pumping began May 6, 2000. **No pumping in October 2000; a total of 14.1 Kgallons has been pumped from this tank since start of pumping in May 2000.**

Tank 241-AX-101 - Pumping began July 29, 2000. **No pumping in October 2000; a total of 8.3 Kgallons has been pumped from this tank since start of pumping in July 2000.**

Tank 241-S-102 - Pumping problems forced many shutdowns. The pump was replaced and pumping resumed on February 19, 2000. Problems with the new pump forced a shutdown on March 23, 2000. Pumping was interrupted in early June 2000; due to the flushing involved in trying to return to pumping, June pumping resulted in a net addition to the tank. **No pumping in October 2000; a total of 56.8 Kgallons has been pumped from this tank since start of pumping in March 1999.**

Tank 241-S-106 - Pumping was discontinued on January 3, 2000, to allow the waste levels to stabilize, so waste porosities and final waste volumes can then be calculated to determine whether this tank meets Interim Stabilization criteria. **As of October 31, 2000, waste levels had not yet stabilized.**

Tank 241-S-109 - Pumping began September 23, 2000. **In October 2000, a total of 18.2 Kgallons was pumped; a total of 132.2 Kgallons has been pumped from this tank (111.0 Kgallons was pumped in 1979 [primary stabilization], and partial isolation in 1982).**

Tank 241-SX-103 - **Pumping began October 26, 2000, approximately 18 months ahead of schedule. In October 2000, a total of 11.6 Kgal was pumped.**

Tank 241-SX-105 - Pumping began August 8, 2000. **In October 2000, a total 29.2 Kgallons was pumped; a total of 123.8 Kgallons has been pumped since start of pumping in August 2000.**

Tank 241-U-102 - Pumping began January 20, 2000. **In October 2000, a total of 4.9 Kgallons was pumped; a total of 61.6 Kgallons has been pumped from this tank since start of pumping in January 2000.**

Tank 241-U-105 - Pumping began December 10, 1999, and was discontinued July 13, 2000, because of a pump failure. **Waste levels are being allowed to stabilize, so waste porosities and final waste volumes can then be calculated to determine whether this tank meets Interim Stabilization criteria. As of October 31, 2000, waste levels had not yet stabilized.**

Tank 241-U-106 - Pumping began August 24, 2000. **In October 2000, a total of 3.8 Kgallons was pumped; a total of 36.4 Kgallons has been pumped from this tank since start of pumping in August 2000.**

Tank 241-U-109 - Pumping began March 11, 2000. **In October 2000, a total of 3.6 Kgallons was pumped; a total of 62.1 Kgallons has been pumped from this tank since start of pumping in March 2000.**

2. Double-Shell Tank 241-SY-101 Waste Level Increase

Tank 241-SY-101 exhibited gas release events due to generation and retention of flammable gas. A mixer pump was installed in the tank in July 1993, which circulated liquid wastes. This prevents gas bubbles from building up at the bottom, and results in venting of small steady gas releases. Since early 1997, the surface level has been rising in spite of regular mixer pump operations.

> Resolution Status: On February 11, 1998, the PRC recommended that the DOE-RL declare an Unreviewed Safety Question (USQ) over the continued level growth observed in this tank. The contractor has established a multi-disciplinary team to solve the level growth issues in SY-101.

Final calculated transfer and dilution volumes for level growth remediation can be found in Memo 74B50-00-030, dated March 23, 2000.
The controlled Mixer Pump Observation Period (MPOP) has been completed and the data has been evaluated. Tank SY-101 waste continues to perform as expected. This performance supported the completion of the observation period on July 17, 2000. The waste characteristics have demonstrated that it no longer is retaining significant amounts of releasable gas. The mixer pump has been placed into a fully operable "Standby Mode."

3. RL-PMHC-TANKFARM-1999-0023, Occurrence Report, "Additional Information Regarding Crust Growth in 241-SY-101," Off-Normal Occurrence, **Latest Update: October 2, 2000.**

On December 18, 1999, approximately 90,000 gallons of nuclear waste was transferred from tank SY-101 to SY-102 in the first of three planned transfers.

In conjunction with the transfers, water is added to the waste to reduce the concentration of gas generation and gas-retaining chemicals to reduce gas buildup in SY-101 and associated receiving tanks.

The second of the three waste transfers was completed on January 27, 2000.

The third and final phase of transfers was initiated on February 29, and completed March 2, 2000.

On April 3, 2000, a Mixer Pump Observation Period (MPOP) began, which was completed; data is being evaluated.

The mixer pump has been placed in fully operable "standby mode."

This report is being extended pending completion and evaluation of tank activities during the MPOP and resolution of the USQ issues.

It is anticipated than an Update or Final report will be submitted no later than December 31, 2000.

4. RP-CHG-TANKFARM-2000-0026, Occurrence Report, "AW-102/104 Annulus Continuous Air Monitor Radiation Hi Failure Alarm (USQ)," Unusual Occurrence, **Latest Update: October 31, 2000**

On March 22, 2000, a loss of power resulted in a Radiation Hi Failure alarm on the AW-102/104 Continuous Air Monitor (CAM) and the unplanned entry into LCO 3.2.6.

The LCO requires either the annulus conductivity probe system or the annulus CAMs to be operable. Loss of power to the CAMs during maintenance on the separate conductivity probe system resulted in the unplanned entry.

The LCO was exited upon completion of the annulus conductivity probe functional test.

The cross-site transfer in progress was shut down. It was attempted to restore power to the CAM. The power breaker was found tripped. Troubleshooting the loss of power commenced.

This Update report is being submitted in order to allow additional time for PAAA screening, Risk Rank Value, Root Cause Analysis and Corrective Action Plan.

Troubleshooting revealed burned wiring at a junction box in a Confined Space.

Corrective Action: To reroute the power from a difference source, using new wiring, according to Work Package #2E-00-859/2 - Completed October 12, 2000. This upgraded wiring system will greatly enhance the reliability of these CAMs.

No further evaluation is required.

5. RP-CHG-TANKFARM-2000-0034, Occurrence Report, "241-SY Exhauster Shutdown (USQ)," Unusual Occurrence, Latest update: October 25, 2000

On April 25, 2000, during performance of the monthly continuous air monitor (CAM) source check of the SY-Tank Farm Primary Ventilation System, the CAM monitoring the ventilation system exhibited an unexplained high radiation count alarm while in the test mode, which caused the SY primary exhauster to shutdown on interlock.

This exhauster is required to be operational to prevent the possible accumulation of flammable gas in the SY double-shell tanks. Start-up of the P-28 back-up exhauster was unsuccessful due to a suspected pressure switch problem.

All unnecessary personnel were evacuated from the SY-Tank Farm. Entered action statements per Limiting Condition for Operation (LC) 3.2.1. All saltwell pumps discharging to tank SY-102 were secured and placed in short-term shutdown. No indicate of radiation release was detected.

An investigation was initiated to determine the cause of the unexpected high-count alarm. Troubleshooting began on the suspected P-28 pressure switch problem.

PAAA screening determined this event met the criteria to be considered part of the group of CAM failures previously determined by CHG to be a programmatic concern.

The root cause of this event was determined to be Management Problem/Policy Not adequately Defined, Disseminated, or Enforced.

Evaluation results indicated that the majority of failures were attributed to defective or failed parts. Review of the historical PAAA information has identified that the volume of occurrences of CAM-related failures in approximately the last 18 months are indicative of a programmatic weakness and a noncompliance with 10CFR830.120.

The direct cause of this event was determined to be Procedure Problem/Defective or Inadequate Procedure.

Appropriate corrective actions were proposed. A request to change the Authorization Basis to allow HEPA filter system differential pressure switch/interlocks to be an equivalent control to the ventilation stack CAM interlock system was submitted to ORP and approved.

On September 28, 2000, implementation actions associated with HEPA filter differential pressure switch/exhauster interlock for six primary exhaust systems was completed.

No further evaluation is required.

6. Changes to this report

Two columns, solids volume monitoring method and saltcake volume monitoring method, which showed which surface level measurement devices were being used, have been deleted from both Table A-5, DST inventory, and Table A-5, SST inventory. This information is shown in Table D-4, SST monitoring compliance, and Table D-5, DST monitoring compliance. Much more extensive information is shown in Tables D-4 and D-5, including whether the monitoring devices are actually working or are O/S, and which is the primary monitoring leak detection device.

Footnote (15) has been added to Table F-1, Single-Shell Leak Volume Estimates (page F-4), to include information concerning corrective action plans for eight SSTs where groundwater contamination likely originated from tank farm operations.

APPENDIX A

MONTHLY SUMMARY

TABLE A-1. MONTHLY SUMMARY
TANK STATUS
October 31, 2000

	200 EAST AREA	200 WEST AREA	TOTAL
IN SERVICE	25	03	28 (1)
OUT OF SERVICE	66	83	149
SOUND	59	51	110
ASSUMED LEAKER	32	35	67
INTERIM STABILIZED	60	65	125
ISOLATED			
PARTIAL INTERIM	11	30	41
INTRUSION PREVENTION COMPLETE	55	53	108
CONTROLLED, CLEAN, AND STABLE	12	24	36

WASTE VOLUMES (Kgallons)

		200 EAST AREA	200 WEST AREA	TOTAL	SST TANKS	DST TANKS	TOTAL
SUPERNATANT							
AW	Aging waste	1748	0	1748	0	1748	1748
CC	Complexant concentrate waste	4241	1262	5503	0	5503	5503
CP	Concentrated phosphate waste	1090	0	1090	0	1090	1090
DC	Dilute complexed waste	30	0	30	1	29	30
DN	Dilute non-complexed waste	1583	926	2509	0	2509	2509
PD	PUREX/TRUsolids	318	0	318	0	318	318
NCPLX	Non-complexed waste	164	149	313	313	0	313
DSSF	Double-shell slurry feed	6038	168	6206	1049	5157	6206
TOTAL SUPERNATANT		15212	2505	17717	1363	16354	17717
SOLIDS							
Sludge (includes liquids)		6502	5648	12150	11059	1091	12150
Saltcake (includes liquids)		8106	15959	24065	20857	3208	24065
TOTAL SOLIDS		14608	21607	36215	31916	4299	36215
TOTAL WASTE		29820	24112	53932	33279	20653	53932
AVAILABLE SPACE IN TANKS		9930	712	10642	0	10642	10642
DRAINABLE INTERSTITIAL LIQUID (2)		1425	2188	3613	3613	(2)	3613
DRAINABLE LIQUID REMAINING (2)		2472	2501	4973	4973	(2)	4973

(1) Includes six double-shell tanks on Hydrogen Watch List not currently allowed to receive waste, AN-103, AN-104, AN-105, AW-101, SY-101, and SY-103.

(2) Drainable Interstitial Liquid and Drainable Liquid Remaining for single-shell tanks only; not applicable for double-shell tanks

TABLE A-2. TANK USE SUMMARY

October 31, 2000

TANK FARMS	TANKS AVAILABLE TO RECEIVE WASTE TRANSERS	SOUND	ASSUMED LEAKER	ISOLATED TANKS: PARTIAL INTERIM ISOLATED	ISOLATED TANKS: INTRUSION PREVENTION COMPLETED	ISOLATED TANKS: CONTROLLED CLEAN, AND STABLE	INTERIM STABILIZED TANKS
EAST							
A	0	3	3	2	4	0	5
AN	7 (1)	7	0	0	0	0	0
AP	8	8	0	0	0	0	0
AW	6 (1)	6	0	0	0	0	0
AX	0	2	2	1	3	0	3
AY	2	2	0	0	0	0	0
AZ	2	2	0	0	0	0	0
B	0	6	10	0	16	0	16
BX	0	7	5	0	12	12	12
BY	0	7	5	5	7	0	10
C	0	9	7	3	13	0	14
Total	25	59	32	11	55	12	60
WEST							
S	0	11	1	10	2	0	5
SX	0	5	10	6	9	0	11
SY	3 (1)	3	0	0	0	0	0
T	0	9	7	5	11	0	16
TX	0	10	8	0	18	18	18
TY	0	1	5	0	6	6	6
U	0	12	4	9	7	0	9
Total	3	51	35	30	53	24	65
TOTAL	28	110	67	41	108	36	125

(1) Six Double-Shell Tanks on the Hydrogen Watch List are not currently receiving waste transfers (AN-103, 104, 105, AW-101, SY-101 and 103).

TABLE A-3. PUMPING RECORD, LIQUID STATUS AND PUMPABLE LIQUID REMAINING IN TANK FARMS

October 31, 2000

	Waste Volumes (Kgallons)						
TANK FARMS	PUMPED THIS MONTH	PUMPED FY TO DATE	CUMULATIVE TOTAL PUMPED 1979 TO DATE	SUPERNATANT LIQUID	DRAINABLE INTERSTITIAL REMAINING	DRAINABLE LIQUID REMAINING	PUMPABLE SST LIQUID REMAINING
EAST							
A	0.0	0.0	164.6	503	161	665	622
AN	N/A	N/A	N/A	3749	N/A	N/A	N/A
AP	N/A	N/A	N/A	5743	N/A	N/A	N/A
AW	N/A	N/A	N/A	2493	N/A	N/A	N/A
AX	0.0	0.0	21.3	378	105	483	447
AY	N/A	N/A	N/A	433	N/A	N/A	N/A
AZ	N/A	N/A	N/A	1748	N/A	N/A	N/A
B	0.0	0.0	0.0	15	262	277	203
BX	N/A	0.0	200.2	24	127	N/A	N/A
BY	0.0	0.0	1567.8	0	581	581	498
C	0.0	0.0	103.0	126	189	315	207
Total	0.0	0.0	2056.9	15212	1425	2321	1977
WEST							
S	18.2	18.2	1062.1	76	633	709	591
SX	56.6	56.6	514.2	134	470	604	531
SY	N/A	N/A	N/A	2188	N/A	N/A	N/A
T	0.0	0.0	245.7	29	218	246	168
TX	N/A	0.0	1205.7	9	285	N/A	N/A
TY	N/A	0.0	29.9	0	53	N/A	N/A
U	12.3	12.3	346.5	69	527	596	514
Total	87.1	87.1	3404.1	2505	2186	2155	1804
TOTAL	87.1	87.1	5461.0	17717	3611	4476	3781

N/A = Not applicable for Double-Shell Tank Farms, and Single-Shell Tank Farms which have been declared Controlled, Clean and Stable (BX, TX, TY).

TABLE A-4. INVENTORY SUMMARY BY TANK FARM

October 31, 2000

TANK FARM	TOTAL WASTE	AVAIL SPACE	SUPERNATANT LIQUID VOLUMES (Kgallo: AW	CC	CP	DC	DN	PD	NCPLX	DSSE	TOTAL	SOLIDS VOLUME: SLUDGE	SALT CAKE	TOTAL
EAST														
A	1479	0	0	0	0	0	0	0	0	503	503	574	402	976
AN	5497	2483	0	1782	0	0	225	0	0	1742	3749	0	1748	1748
AP	5832	3288	0	2459	1090	0	33	0	0	2161	5743	0	89	89
AW	3986	2854	0	0	0	0	921	318	0	1254	2493	571	922	1493
AX	826	0	0	0	0	0	0	0	0	378	378	26	422	448
AY	725	1235	0	0	0	29	404	0	0	0	433	292	0	292
AZ	1905	70	1748	0	0	0	0	0	0	0	1748	157	0	157
B	1909	0	0	0	0	0	0	0	15	0	15	1211	683	1894
BX	1490	0	0	0	0	0	0	0	24	0	24	1259	207	1466
BY	4387	0	0	0	0	0	0	0	0	0	0	754	3633	4387
C	1784	0	0	0	0	1	0	0	125	0	126	1658	0	1658
Total	29820	9930	1748	4241	1090	30	1583	318	164	6038	15212	6502	8106	14608
WEST														
S	4942	0	0	0	0	0	0	0	75	1	76	1184	3682	4866
SX	3878	0	0	0	0	0	0	0	0	134	134	927	2817	3744
SY	2708	712	0	1262	0	0	926	0	0	0	2188	71	449	520
T	1877	0	0	0	0	0	0	0	29	0	29	1703	145	1848
TX	6810	0	0	0	0	0	0	0	9	0	9	697	6104	6801
TY	639	0	0	0	0	0	0	0	0	0	0	529	110	639
U	3258	0	0	0	0	0	0	0	36	33	69	537	2652	3189
Total	24112	712	0	1262	0	0	926	0	149	168	2505	5648	15959	21607
TOTAL	53932	10642	1748	5503	1090	30	2509	318	313	6206	17717	12150	24065	36215

29.00

TABLE A-5. INVENTORY AND STATUS BY TANK - DOUBLE-SHELL TANKS

October 31, 2000

TANK STATUS								SOLIDS VOLUME					PHOTOS/VIDEOS		
TANK	WASTE MATL	TANK STATUS	TANK USE	EQUIVA-LENT WASTE INCHES	TOTAL WASTE (Kgal)	AVAIL. SPACE (1) (Kgal)	SUPER-NATANT LIQUID (Kgal)	SLUDGE (includes liquid) (Kgal)	SLUDGE LIQUID (15% porosity) (Kgal)	SALTCAKE (includes liquid) (Kgal)	SALTCAKE LIQUID (25% porosity) (Kgal)	SOLIDS VOLUME UPDATE	LAST IN-TANK PHOTO	LAST IN-TANK VIDEO	SEE FOOTNOTE FOR THESE CHANGES
							AN TANK FARM STATUS								
AN-101	DN	SOUND	DRCVR	81.8	225	915	225	0	0	0	0	06/30/99			
AN-102	CC	SOUND	CWHT	383.6	1055	85	966	0	0	89	22	06/30/99			
AN-103	DSS	SOUND	CWHT	348.0	957	183	500	0	0	457	114	06/30/99	10/29/87		
AN-104	DSSF	SOUND	CWHT	382.5	1052	88	603	0	0	449	112	06/30/99	08/19/88		
AN-105	DSSF	SOUND	CWHT	410.2	1128	12	639	0	0	489	122	06/30/99	01/26/88		
AN-106	CC	SOUND	CWHT	13.8	38	1102	21	0	0	17	4	06/30/99			
AN-107	CC	SOUND	CWHT	378.9	1042	98	795	0	0	247	62	06/30/99	09/01/88		
7 DOUBLE-SHELL TANKS				TOTALS	5497	2483	3749	0	0	1748	436				
							AP TANK FARM STATUS								
AP-101	DSSF	SOUND	DRCVR	405.1	1114	26	1114	0	0	0	0	05/01/89			
AP-102	CP	SOUND	GRTFD	396.4	1090	50	1090	0	0	0	0	07/11/89			
AP-103	CC	SOUND	DRCVR	102.9	283	857	283	0	0	0	0	05/31/96			
AP-104	CC	SOUND	GRTFD	403.6	1110	30	1110	0	0	0	0	10/13/88			
AP-105	DSSF	SOUND	CWHT	413.1	1136	4	1047	0	0	89	22	06/30/99		09/27/95	
AP-106	DC	SOUND	DRCVR	226.5	623	517	623	0	0	0	0	10/13/88			
AP-107	DC	SOUND	DRCVR	161.1	443	697	443	0	0	0	0	10/13/88			
AP-108	DN	SOUND	DRCVR	12.0	33	1107	33	0	0	0	0	10/13/88			
8 DOUBLE-SHELL TANKS				TOTALS	5832	3288	5743	0	0	89	22				
							AW TANK FARM STATUS								
AW-101	DSSF	SOUND	CWHT	409.8	1127	13	752	0	0	375	94	10/31/00	03/17/88		
AW-102	DN	SOUND	EVFD	23.3	64	1076	34	0	0	30	8	06/30/99	02/02/83		
AW-103	PD	SOUND	DRCVR	185.1	509	631	146	316	79	47	12	06/30/99			
AW-104	DN	SOUND	DRCVR	406.5	1118	22	887	0	0	231	58	06/30/99	02/02/83		
AW-105	PD	SOUND	DRCVR	155.3	427	713	172	255	38	0	0	06/30/99			
AW-106	DSSF	SOUND	SRCVR	269.5	741	399	502	0	0	239	60	06/30/99	02/02/83		
6 DOUBLE-SHELL TANKS				TOTALS	3986	2854	2493	571	117	922	232				

TABLE A-5. INVENTORY AND STATUS BY TANK - DOUBLE-SHELL TANKS

October 31, 2000

TANK STATUS														PHOTOS/VIDEOS		
TANK	WASTE MATL	TANK STATUS	TANK USE	EQUIVA-LENT WASTE INCHES	TOTAL WASTE (Kgal)	AVAIL. SPACE (1) (Kgal)	SUPER-NATANT LIQUID (Kgal)	SLUDGE (includes liquid) (Kgal)	SLUDGE LIQUID (15% porosity) (Kgal)	SALTCAKE (includes liquid) (Kgal)	SALTCAKE LIQUID (25% porosity) (Kgal)	SOLIDS VOLUME UPDATE	LAST IN-TANK PHOTO	LAST IN-TANK VIDEO	SEE FOOTNOTE FOR THESE CHANGES
								AY TANK FARM STATUS							
AY-101	DC	SOUND	DRCVR	49.8	137	843	29	108	14	0	0	06/30/99	12/28/82		
AY-102	DN	SOUND	DRCVR	213.8	588	392	404	184	28	0	0	10/31/00	04/28/81		
2 DOUBLE-SHELL TANKS				TOTALS	725	1235	433	292	42	0	0				
								AZ TANK FARM STATUS							
AZ-101	AW	SOUND	CWHT	330.9	910	70	858	52	8	0	0	06/30/98	08/18/83		
AZ-102	AW	SOUND	DRCVR	361.8	995	0	890	105	16	0	0	06/30/99	10/24/84		
2 DOUBLE-SHELL TANKS				TOTALS	1905	70	1748	157	24	0	0				
								SY TANK FARM STATUS							
SY-101	CC	SOUND	CWHT	352.7	970	170	887	0	0	83	21	06/30/99	04/12/89		
SY-102	DC	SOUND	DRCVR	362.5	997	143	926	71	11	0	0	06/30/99	04/29/81		
SY-103	CC	SOUND	CWHT	269.5	741	399	375	0	0	366	92	06/30/99	10/01/85		(a)
3 DOUBLE-SHELL TANKS				TOTALS	2708	712	2188	71	11	449	113				
GRAND TOTAL					20653	10642	16354	1091	194	3208	803				

Note: +/- 1 Kgal differences are the result of computer rounding

Available Space Calculations Used in this Document	
Tank Farms	(Most Conservative)
AN, AP, AW, SY	1,140,000 gal (414.5 1,140 Kgal
AY, AZ (Aging Wast	980,000 gal (356.4 i 980 Kgal

NOTE: Supernate + Sludge (includes liquid) + Saltcake (includes liquid) = Total Waste

(1) Available Space volumes include restricted space, - see Appendix C tables for allocation of these restrictions.

(a) SY-103 - from March 2000 thru August 2000, the total saltcake was mistakenly shown as total sludge, due to re-calculations and a new format used during that time. There is no sludge in this tank.

TABLE A-6. INVENTORY AND STATUS BY TANK - SINGLE-SHELL TANKS

October 31, 2000

These volumes are the result of engineering calculations and may not agree with surface level measurements

TANK STATUS					LIQUID VOLUME						SOLIDS VOLUME			PHOTOS/VIDEOS		
TANK	WASTE MAT'L.	TANK INTEGRITY	STABIL/ ISOLATION STATUS	TOTAL WASTE (Kgal)	SUPER-NATE LIQUID (Kgal)	DRAIN-ABLE INTER-STIT. (Kgal)	PUMPED THIS MONTH (Kgal)	TOTAL PUMPED (Kgal)	DRAIN-ABLE LIQUID REMAIN (Kgal)	PUMP-ABLE LIQUID REMAIN (Kgal)	SLUDGE (Kgal)	SALT CAKE (Kgal)	SOLIDS VOLUME UPDATE	LAST IN-TANK PHOTO	LAST IN-TANK VIDEO	SEE FOOTNOTES FOR THESE CHANGES
							A TANK FARM STATUS									
A-101	DSSF	SOUND	/PI	877	494	95	0.0	14.1	590	574	3	380	09/30/99	08/21/85		(g)
A-102	DSSF	SOUND	IS/PI	41	4	8	0.0	39.5	12	4	15	22	07/27/89	07/20/89		
A-103	DSSF	ASMD LKR	IS/IP	371	5	45	0.0	111.0	50	43	366	0	06/03/88	12/28/88		
A-104	NCPLX	ASMD LKR	IS/IP	28	0	4	0.0	0.0	4	0	28	0	01/27/78	06/25/86		
A-105	NCPLX	ASMD LKR	IS/IP	37	0	0	0.0	0.0	0	0	37	0	10/31/00	08/20/86		
A-106	CP	SOUND	IS/IP	125	0	9	0.0	0.0	9	1	125	0	09/07/82	08/19/86		
6 SINGLE-SHELL TANKS			TOTALS	1479	503	161	0.0	164.6	665	622	574	402				
							AX TANK FARM STATUS									
AX-101	DSSF	SOUND	/PI	676	378	74	0.0	8.3	452	436	3	295	09/30/99	08/18/87		(h)
AX-102	CC	ASMD LKR	IS/IP	30	0	7	0.0	13.0	7	0	7	23	06/30/99	06/05/89		
AX-103	CC	SOUND	IS/IP	112	0	23	0.0	0.0	23	11	8	104	06/30/99	08/13/87		
AX-104	NCPLX	ASMD LKR	IS/IP	6	0	1	0.0	0.0	1	0	6	0	06/30/99	08/18/87		
4 SINGLE-SHELL TANKS			TOTALS:	826	378	105	0.0	21.3	483	447	26	422				
							B TANK FARM STATUS									
B-101	NCPLX	ASMD LKR	IS/IP	113	0	24	0.0	0.0	24	17	0	113	06/30/99	05/19/83		
B-102	NCPLX	SOUND	IS/IP	32	4	7	0.0	0.0	11	4	0	28	06/30/99	08/22/85		
B-103	NCPLX	ASMD LKR	IS/IP	59	0	11	0.0	0.0	11	3	0	59	06/30/99	10/13/88		
B-104	NCPLX	SOUND	IS/IP	371	1	45	0.0	0.0	46	42	309	61	06/30/99	10/13/88		
B-105	NCPLX	ASMD LKR	IS/IP	158	0	20	0.0	0.0	20	16	28	130	06/30/99	05/19/88		
B-106	NCPLX	SOUND	IS/IP	117	1	25	0.0	0.0	26	19	0	116	02/29/00	02/28/85		
B-107	NCPLX	ASMD LKR	IS/IP	165	1	22	0.0	0.0	23	19	93	71	06/30/99	02/28/85		
B-108	NCPLX	SOUND	IS/IP	94	0	15	0.0	0.0	15	11	53	41	06/30/99	05/10/85		
B-109	NCPLX	SOUND	IS/IP	127	0	21	0.0	0.0	21	17	63	64	06/30/99	04/02/85		
B-110	NCPLX	ASMD LKR	IS/IP	246	1	27	0.0	0.0	28	20	245	0	02/28/85	03/17/88		
B-111	NCPLX	ASMD LKR	IS/IP	237	1	23	0.0	0.0	24	29	236	0	06/28/85	06/26/85		
B-112	NCPLX	ASMD LKR	IS/IP	33	3	4	0.0	0.0	7	3	30	0	05/31/85	05/29/85		
B-201	NCPLX	ASMD LKR	IS/IP	29	1	4	0.0	0.0	5	1	28	0	04/28/82	11/12/86	06/23/95	
B-202	NCPLX	SOUND	IS/IP	27	0	4	0.0	0.0	4	0	27	0	05/31/85	05/29/85	06/15/95	
B-203	NCPLX	ASMD LKR	IS/IP	51	1	5	0.0	0.0	6	1	50	0	05/31/84	11/13/86		
B-204	NCPLX	ASMD LKR	IS/IP	50	1	5	0.0	0.0	6	1	49	0	05/31/84	10/22/87		
16 SINGLE-SHELL TANKS			TOTALS	1909	15	262	0.0	0.0	277	203	1211	683				

TABLE A-6. INVENTORY AND STATUS BY TANK - SINGLE-SHELL TANKS

October 31, 2000

These volumes are the result of engineering calculations and may not agree with surface level measurements

TANK STATUS					LIQUID VOLUME						SOLIDS VOLUME			PHOTOS/VIDEOS		
TANK	WASTE MAT'L.	TANK INTEGRITY	STABIL/ ISOLATION STATUS	TOTAL WASTE (Kgal)	SUPER-NATE (Kgal)	DRAIN-ABLE INTER-STIT. (Kgal)	PUMPED THIS MONTH (Kgal)	TOTAL PUMPED (Kgal)	DRAIN-ABLE LIQUID REMAIN (Kgal)	PUMP-ABLE LIQUID REMAIN (Kgal)	SLUDGE (Kgal)	SALT CAKE (Kgal)	SOLIDS VOLUME UPDATE	LAST IN-TANK PHOTO	LAST IN-TANK VIDEO	SEE FOOTNOTES FOR THESE CHANGES
								BX TANK FARM STATUS								
BX-101	NCPLX	ASMD LKR	IS/IP/CCS	43	1	4	0.0	0.0	5	1	42	0	04/28/82	11/24/88	11/10/94	
BX-102	NCPLX	ASMD LKR	IS/IP/CCS	96	0	0	0.0	0.0	0	0	96	0	04/28/82	09/18/85		
BX-103	NCPLX	SOUND	IS/IP/CCS	71	9	4	0.0	0.0	13	9	62	0	11/29/83	10/31/86	10/27/94	
BX-104	NCPLX	SOUND	IS/IP/CCS	93	3	4	0.0	17.4	7	3	90	0	02/29/00	09/21/89		
BX-105	NCPLX	SOUND	IS/IP/CCS	51	5	4	0.0	15.0	9	5	46	0	06/30/99	10/23/86		
BX-106	NCPLX	SOUND	IS/IP/CCS	38	0	4	0.0	14.0	4	0	38	0	08/01/95	05/19/88	07/17/95	
BX-107	NCPLX	SOUND	IS/IP/CCS	345	1	36	0.0	23.1	37	33	344	0	09/18/90	09/11/90		
BX-108	NCPLX	ASMD LKR	IS/IP/CCS	26	0	4	0.0	0.0	4	0	26	0	07/31/79	05/05/94		
BX-109	NCPLX	SOUND	IS/IP/CCS	193	0	25	0.0	8.2	25	20	193	0	09/17/90	09/11/90		
BX-110	NCPLX	ASMD LKR	IS/IP/CCS	207	3	28	0.0	1.5	31	26	133	71	06/30/99	07/15/94	10/13/94	
BX-111	NCPLX	ASMD LKR	IS/IP/CCS	162	1	5	0.0	116.9	6	2	25	136	06/30/99	05/19/94	02/28/95	
BX-112	NCPLX	SOUND	IS/IP/CCS	165	1	9	0.0	4.1	10	7	164	0	09/17/90	09/11/90		
12 SINGLE-SHELL TANKS			TOTALS:	1490	24	127	0.0	200.2	151	106	1259	207				
								BY TANK FARM STATUS								
BY-101	NCPLX	SOUND	IS/IP	387	0	28	0.0	35.8	28	24	109	278	05/30/84	09/19/89		
BY-102	NCPLX	SOUND	IS/PI	277	0	40	0.0	159.0	40	33	0	277	05/01/95	09/11/87	04/11/95	
BY-103	NCPLX	ASMD LKR	IS/PI	400	0	58	0.0	95.9	58	53	9	391	06/30/99	09/07/89	02/24/97	
BY-104	NCPLX	SOUND	IS/IP	326	0	40	0.0	329.5	40	36	150	176	06/30/99	04/27/83		
BY-105	NCPLX	ASMD LKR	/PI	503	0	121	0.0	0.0	121	111	48	455	06/31/99	07/01/86		
BY-106	NCPLX	ASMD LKR	/PI	562	0	132	0.0	63.7	132	119	84	478	12/31/98	11/04/82		
BY-107	NCPLX	ASMD LKR	IS/IP	266	0	39	0.0	56.4	39	35	40	226	06/30/99	10/15/86		
BY-108	NCPLX	ASMD LKR	IS/IP	228	0	33	0.0	27.5	33	26	154	74	04/28/82	10/15/86		
BY-109	NCPLX	SOUND	IS/PI	290	0	31	0.0	157.1	31	26	57	233	07/08/87	06/18/97		
BY-110	NCPLX	SOUND	IS/IP	398	0	21	0.0	213.3	21	17	103	295	09/10/79	07/26/84		
BY-111	NCPLX	SOUND	IS/IP	459	0	14	0.0	313.2	14	6	0	459	06/30/99	10/31/86		
BY-112	NCPLX	SOUND	IS/IP	291	0	24	0.0	116.4	24	12	0	291	06/30/99	04/14/88		
12 SINGLE-SHELL TANKS			TOTALS:	4387	0	581	0.0	1567.8	581	498	754	3633				

TABLE A-6. INVENTORY AND STATUS BY TANK - SINGLE-SHELL TANKS

October 31, 2000

These volumes are the result of engineering calculations and may not agree with surface level measurements

TANK STATUS					LIQUID VOLUME						SOLIDS VOLUME					
TANK	WASTE MAT'L.	TANK INTEGRITY	STABIL/ ISOLATION STATUS	TOTAL WASTE (Kgal)	SUPER-NATE (Kgal)	DRAIN-ABLE INTER-STIT. (Kgal)	PUMPED THIS MONTH (Kgal)	TOTAL PUMPED (Kgal)	DRAIN-ABLE LIQUID REMAIN (Kgal)	PUMP-ABLE LIQUID REMAIN (Kgal)	SLUDGE (Kgal)	SALT CAKE (Kgal)	SOLIDS VOLUME UPDATE	LAST IN-TANK PHOTO	LAST IN-TANK VIDEO	SEE FOOTNOTES FOR THESE CHANGES
							C TANK FARM STATUS									
C-101	NCPLX	ASMD LKR	IS/IP	88	0	4	0.0	0.0	4	0	88	0	11/29/83	11/17/87		
C-102	DC	SOUND	IS/IP	316	0	62	0.0	46.7	62	55	316	0	09/30/95	05/18/76	08/24/95	
C-103	NCPLX	SOUND	/PI	198	79	18	0.0	0.0	97	83	119	0	12/31/98	07/28/87		
C-104	CC	SOUND	IS/IP	263	0	0	0.0	0.0	0	0	263	0	02/01/00	07/25/90		
C-105	NCPLX	SOUND	IS/PI	132	0	20	0.0	0.0	20	0	132	0	02/29/00	08/05/94	08/30/95	
C-106	NCPLX	SOUND	/PI	48	42	0	0.0	0.0	42	9	6	0	10/31/99	08/06/94	08/08/94	
C-107	DC	SOUND	IS/IP	257	0	30	0.0	40.8	30	25	257	0	06/30/99	00/00/00		
C-108	NCPLX	SOUND	IS/IP	66	0	4	0.0	0.0	4	0	66	0	02/24/84	12/05/74	11/17/94	
C-109	NCPLX	SOUND	IS/IP	66	4	4	0.0	0.0	8	4	62	0	11/29/83	01/30/76		
C-110	DC	ASMD LKR	IS/IP	178	1	37	0.0	15.5	38	30	177	0	06/14/95	08/12/86	05/23/95	
C-111	NCPLX	ASMD LKR	IS/IP	57	0	4	0.0	0.0	4	0	57	0	04/28/82	02/25/70	02/02/95	
C-112	NCPLX	SOUND	IS/IP	104	0	6	0.0	0.0	6	1	104	0	09/18/90	09/18/90		
C-201	NCPLX	ASMD LKR	IS/IP	2	0	0	0.0	0.0	0	0	2	0	03/31/82	12/02/86		
C-202	EMPTY	ASMD LKR	IS/IP	1	0	0	0.0	0.0	0	0	1	0	01/19/79	12/09/86		
C-203	NCPLX	ASMD LKR	IS/IP	5	0	0	0.0	0.0	0	0	5	0	04/28/82	12/09/86		
C-204	NCPLX	ASMD LKR	IS/IP	3	0	0	0.0	0.0	0	0	3	0	04/28/82	12/09/86		
16 SINGLE-SHELL TANKS			TOTALS:	1784	126	189	0.0	103.0	315	207	1658	0				
							S TANK FARM STATUS									
S-101	NCPLX	SOUND	/PI	427	12	83	0.0	0.0	95	80	211	204	12/31/98	03/18/88		
S-102	DSSF	SOUND	/PI	492	0	93	0.0	56.8	93	89	105	387	05/31/00	03/18/88		(c)
S-103	DSSF	SOUND	IS/PI	237	1	45	0.0	23.9	46	39	9	227	04/30/00	06/01/89	01/28/00	
S-104	NCPLX	ASMD LKR	IS/IP	294	1	34	0.0	0.0	35	31	293	0	12/20/84	12/12/84		
S-105	NCPLX	SOUND	IS/IP	456	0	42	0.0	114.3	42	33	2	454	09/26/88	04/12/89		
S-106	NCPLX	SOUND	/PI	328	0	10	0.0	203.6	10	2	0	328	09/30/00	03/17/89	01/28/00	(a)
S-107	NCPLX	SOUND	/PI	376	14	61	0.0	0.0	75	61	293	69	06/30/99	03/12/87		
S-108	NCPLX	SOUND	IS/PI	432	0	0	0.0	199.8	0	0	5	427	10/01/99	03/12/87	12/03/96	
S-109	NCPLX	SOUND	/PI	486	0	72	18.2	132.2	72	62	13	473	10/31/00	12/31/98		(j)
S-110	NCPLX	SOUND	IS/PI	390	0	30	0.0	203.1	30	27	131	259	05/14/92	03/12/87	12/11/96	
S-111	NCPLX	SOUND	/PI	501	48	82	0.0	3.3	130	97	116	337	09/30/99	08/10/89		
S-112	NCPLX	SOUND	/PI	523	0	81	0.0	125.1	81	70	6	517	12/31/98	03/24/87		
12 SINGLE-SHELL TANKS			TOTALS:	4942	76	633	18.2	1062.1	709	591	1184	3682				

TABLE A-6. INVENTORY AND STATUS BY TANK - SINGLE-SHELL TANKS

October 31, 2000

These volumes are the result of engineering calculations and may not agree with surface level measurements

TANK STATUS					LIQUID VOLUME						SOLIDS VOLUME					
TANK	WASTE MAT'L	TANK INTEGRITY	STABIL/ ISOLATION STATUS	TOTAL WASTE (Kgal)	SUPERNATE (Kgal)	DRAINABLE INTERSTIT. (Kgal)	PUMPED THIS MONTH (Kgal)	TOTAL PUMPED (Kgal)	DRAINABLE LIQUID REMAIN (Kgal)	PUMPABLE LIQUID REMAIN (Kgal)	SLUDGE (Kgal)	SALT CAKE (Kgal)	SOLIDS VOLUME UPDATE	LAST IN-TANK PHOTO	LAST IN-TANK VIDEO	SEE FOOTNOTES FOR THESE CHANGES
						SX TANK FARM STATUS										
SX-101	DC	SOUND	/PI	448	0	112	0.0	0.0	112	99	0	448	06/30/99	03/10/89		
SX-102	DSSF	SOUND	/PI	514	134	95	0.0	0.0	229	216	0	380	04/30/00	01/07/88		
SX-103	NCPLX	SOUND	/PI	622	0	135	11.6	11.6	135	120	115	507	10/31/00	12/17/87		(k)
SX-104	DSSF	ASMD LKR	IS/PI	446	0	48	0.0	231.3	48	44	136	310	04/30/00	09/08/88	02/04/98	
SX-105	DSSF	SOUND	/PI	513	0	29	45.0	123.8	29	17	65	448	10/31/00	06/15/88		(f)
SX-106	NCPLX	SOUND	IS/PI	397	0	37	0.0	147.5	37	31	0	397	05/31/99	06/01/89		
SX-107	NCPLX	ASMD LKR	IS/IP	102	0	0	0.0	0.0	0	0	85	17	10/31/00	03/06/87		
SX-108	NCPLX	ASMD LKR	IS/IP	87	0	0	0.0	0.0	0	0	87	0	12/31/93	03/06/87		
SX-109	NCPLX	ASMD LKR	IS/IP	249	0	0	0.0	0.0	0	0	60	189	10/31/00	05/21/86		
SX-110	NCPLX	ASMD LKR	IS/IP	62	0	0	0.0	0.0	0	0	62	0	10/06/76	02/20/87		
SX-111	NCPLX	ASMD LKR	IS/IP	122	0	8	0.0	0.0	8	3	122	0	06/30/99	06/09/94		
SX-112	NCPLX	ASMD LKR	IS/IP	108	0	6	0.0	0.0	6	1	108	0	06/30/99	03/10/87		
SX-113	NCPLX	ASMD LKR	IS/IP	31	0	0	0.0	0.0	0	0	31	0	06/30/99	03/18/88		
SX-114	NCPLX	ASMD LKR	IS/IP	165	0	0	0.0	0.0	0	0	44	121	10/31/00	02/26/87		
SX-115	NCPLX	ASMD LKR	IS/IP	12	0	0	0.0	0.0	0	0	12	0	04/28/82	03/31/88		
15 SINGLE-SHELL TANKS			TOTALS:	3878	134	470	56.6	514.2	604	531	927	2817				
						T TANK FARM STATUS										
T-101	NCPLX	ASMD LKR	IS/PI	102	1	20	0.0	25.3	21	16	37	64	06/30/99	04/07/93		
T-102	NCPLX	SOUND	IS/IP	32	13	3	0.0	0.0	16	11	19	0	08/31/84	06/28/89		
T-103	NCPLX	ASMD LKR	IS/IP	27	4	3	0.0	0.0	7	3	23	0	11/29/83	07/03/84		
T-104	NCPLX	SOUND	IS/PI	317	0	31	0.0	149.5	31	27	317	0	12/31/99	06/29/89	10/07/99	
T-105	NCPLX	SOUND	IS/IP	98	0	5	0.0	0.0	5	0	98	0	05/29/87	05/14/87		
T-106	NCPLX	ASMD LKR	IS/IP	21	2	0	0.0	0.0	2	2	19	0	04/28/82	06/29/89		
T-107	NCPLX	ASMD LKR	IS/PI	173	0	34	0.0	11.0	34	20	173	0	05/31/96	07/12/84	05/09/96	
T-108	NCPLX	ASMD LKR	IS/IP	44	0	5	0.0	0.0	5	0	21	23	06/30/99	07/17/84		

TABLE A-6. INVENTORY AND STATUS BY TANK - SINGLE-SHELL TANKS

October 31, 2000

These volumes are the result of engineering calculations and may not agree with surface level measurements

TANK STATUS					LIQUID VOLUME						SOLIDS VOLUME					
TANK	WASTE MAT'L.	TANK INTEGRITY	STABIL/ ISOLATION STATUS	TOTAL WASTE (Kgal)	SUPER-NATE (Kgal)	DRAIN-ABLE INTER-STIT. (Kgal)	PUMPED THIS MONTH (Kgal)	TOTAL PUMPED (Kgal)	DRAIN-ABLE LIQUID REMAIN (Kgal)	PUMP-ABLE LIQUID REMAIN (Kgal)	SLUDGE (Kgal)	SALT CAKE (Kgal)	SOLIDS VOLUME UPDATE	LAST IN-TANK PHOTO	LAST IN-TANK VIDEO	SEE FOOTNOTES FOR THESE CHANGES
T-109	NCPLX	ASMD LKR	IS/IP	58	0	10	0.0	0.0	10	3	0	58	06/30/99	02/25/93		
T-110	NCPLX	SOUND	IS/PI	369	1	48	0.0	50.3	48	43	368	0	01/31/00	07/12/84	10/07/99	
T-111	NCPLX	ASMD LKR	IS/PI	446	0	38	0.0	9.6	38	35	446	0	04/18/94	04/13/94	02/13/95	
T-112	NCPLX	SOUND	IS/IP	67	7	4	0.0	0.0	11	7	60	0	04/28/82	08/01/84		
T-201	NCPLX	SOUND	IS/IP	29	1	4	0.0	0.0	5	1	28	0	05/31/78	04/15/86		
T-202	NCPLX	SOUND	IS/IP	21	0	3	0.0	0.0	3	0	21	0	07/12/81	07/06/89		
T-203	NCPLX	SOUND	IS/IP	35	0	5	0.0	0.0	5	0	35	0	01/31/78	08/03/89		
T-204	NCPLX	SOUND	IS/IP	38	0	5	0.0	0.0	5	0	38	0	07/22/81	08/03/89		
16 SINGLE-SHELL TANKS			TOTALS:	1877	29	218	0.0	245.7	246	168	1703	145				
TX TANK FARM STATUS																
TX-101	NCPLX	SOUND	IS/IP/CCS	87	3	8	0.0	0.0	11	7	74	10	06/30/99	10/24/85		
TX-102	NCPLX	SOUND	IS/IP/CCS	217	0	27	0.0	94.4	27	16	0	217	08/31/84	10/31/85		
TX-103	NCPLX	SOUND	IS/IP/CCS	157	0	18	0.0	68.3	18	11	0	157	06/30/99	10/31/85		
TX-104	NCPLX	SOUND	IS/IP/CCS	65	5	9	0.0	3.6	14	9	23	37	06/30/99	10/16/84		
TX-105	NCPLX	ASMD LKR	IS/IP/CCS	609	0	25	0.0	121.5	25	14	0	609	08/22/77	10/24/89		
TX-106	NCPLX	SOUND	IS/IP/CCS	341	0	37	0.0	134.6	37	30	0	341	06/30/99	10/31/85		
TX-107	NCPLX	ASMD LKR	IS/IP/CCS	36	1	6	0.0	0.0	7	1	8	27	06/30/99	10/31/85		
TX-108	NCPLX	SOUND	IS/IP/CCS	134	0	8	0.0	13.7	8	1	6	128	06/30/99	09/12/89		
TX-109	NCPLX	SOUND	IS/IP/CCS	384	0	6	0.0	72.3	6	2	384	0	06/30/99	10/24/89		
TX-110	NCPLX	ASMD LKR	IS/IP/CCS	462	0	14	0.0	115.1	14	10	37	425	06/30/99	10/24/89		
TX-111	NCPLX	SOUND	IS/IP/CCS	370	0	10	0.0	98.4	10	6	43	327	06/30/99	09/12/89		
TX-112	NCPLX	SOUND	IS/IP/CCS	649	0	26	0.0	94.0	26	21	0	649	05/30/83	11/19/87		
TX-113	NCPLX	ASMD LKR	IS/IP/CCS	653	0	30	0.0	19.2	30	0	0	653	10/31/00	04/11/83	09/23/94	
TX-114	NCPLX	ASMD LKR	IS/IP/CCS	535	0	17	0.0	104.3	17	11	4	531	06/30/99	04/11/83	02/17/95	
TX-115	NCPLX	ASMD LKR	IS/IP/CCS	568	0	25	0.0	99.1	25	15	0	568	06/30/99	06/15/88		
TX-116	NCPLX	ASMD LKR	IS/IP/CCS	631	0	21	0.0	23.8	21	17	68	563	06/30/99	10/17/89		
TX-117	NCPLX	ASMD LKR	IS/IP/CCS	626	0	10	0.0	54.3	10	5	29	597	06/30/99	04/11/83		
TX-118	NCPLX	SOUND	IS/IP/CCS	286	0	0	0.0	89.1	0	0	21	265	02/01/00	12/19/79		
18 SINGLE-SHELL TANKS			TOTALS:	6810	9	297	0.0	1205.7	306	176	697	6104				

TABLE A-6. INVENTORY AND STATUS BY TANK - SINGLE-SHELL TANKS

October 31, 2000

These volumes are the result of engineering calculations and may not agree with surface level measurements

TANK STATUS					LIQUID VOLUME						SOLIDS VOLUME			PHOTOS/VIDEOS		
TANK	WASTE MAT'L.	TANK INTEGRITY	STABIL/ ISOLATION STATUS	TOTAL WASTE (Kgal)	SUPER-NATE LIQUID (Kgal)	DRAIN-ABLE INTER-STIT. (Kgal)	PUMPED THIS MONTH (Kgal)	TOTAL PUMPED (Kgal)	DRAIN-ABLE LIQUID REMAIN (Kgal)	PUMP-ABLE LIQUID REMAIN (Kgal)	SLUDGE (Kgal)	SALT CAKE (Kgal)	SOLIDS VOLUME UPDATE	LAST IN-TANK PHOTO	LAST IN-TANK VIDEO	SEE FOOTNOTES FOR THESE CHANGES
							TY TANK FARM STATUS									
TY-101	NCPLX	ASMD LKR	IS/IP/CCS	118	0	2	0.0	8.2	2	0	72	46	06/30/99	08/22/89		
TY-102	NCPLX	SOUND	IS/IP/CCS	64	0	12	0.0	6.6	12	5	0	64	06/28/82	07/07/87		
TY-103	NCPLX	ASMD LKR	IS/IP/CCS	162	0	20	0.0	11.5	20	16	162	0	07/09/82	08/22/89		
TY-104	NCPLX	ASMD LKR	IS/IP/CCS	43	0	4	0.0	0.0	4	0	43	0	06/27/90	11/03/87		
TY-105	NCPLX	ASMD LKR	IS/IP/CCS	231	0	12	0.0	3.6	12	10	231	0	04/28/82	09/07/89		
TY-106	NCPLX	ASMD LKR	IS/IP/CCS	21	0	3	0.0	0.0	3	0	21	0	06/30/99	08/22/89		
6 SINGLE-SHELL TANKS			TOTALS:	639	0	53	0.0	29.9	53	31	529	110				
							U TANK FARM STATUS									
U-101	NCPLX	ASMD LKR	IS/IP	25	3	3	0.0	0.0	6	2	22	0	04/28/82	06/19/79		
U-102	NCPLX	SOUND	/PI	313	0	44	4.9	61.6	41	31	43	270	10/31/00	06/08/89		(e)
U-103	NCPLX	SOUND	IS/PI	416	1	33	0.0	98.9	34	28	13	404	05/31/00	09/13/88		
U-104	NCPLX	ASMD LKR	IS/IP	122	0	0	0.0	0.0	0	0	79	43	06/30/99	08/10/89		
U-105	NCPLX	SOUND	/PI	331	0	37	0.0	87.5	37	33	32	299	07/31/00	07/07/88		(b)
U-106	NCPLX	SOUND	/PI	190	0	31	3.8	36.4	31	20	0	190	10/31/00	07/07/88		(f)
U-107	DSSF	SOUND	/PI	406	33	92	0.0	0.0	125	115	15	360	12/31/98	10/27/88		
U-108	NCPLX	SOUND	/PI	468	24	108	0.0	0.0	132	124	29	415	12/31/98	09/12/84		
U-109	NCPLX	SOUND	/PI	403	0	65	3.6	62.1	65	56	35	368	10/31/00	07/07/88		(d)
U-110	NCPLX	ASMD LKR	IS/PI	186	0	18	0.0	0.0	18	14	186	0	12/30/84	12/11/84		
U-111	DSSF	SOUND	/PI	329	0	80	0.0	0.0	80	71	26	303	12/31/98	06/23/88		
U-112	NCPLX	ASMD LKR	IS/IP	49	4	4	0.0	0.0	8	4	45	0	02/10/84	08/03/89		
U-201	NCPLX	SOUND	IS/IP	5	1	1	0.0	0.0	2	1	4	0	08/15/79	08/08/89		
U-202	NCPLX	SOUND	IS/IP	5	1	1	0.0	0.0	2	1	4	0	08/15/79	08/08/89		
U-203	NCPLX	SOUND	IS/IP	3	1	0	0.0	0.0	1	1	2	0	08/15/79	06/13/89		
U-204	NCPLX	SOUND	IS/IP	3	1	0	0.0	0.0	1	1	2	0	08/15/79	06/13/89		
16 SINGLE-SHELL TANKS			TOTALS:	3258	69	517	12.3	346.5	583	502	537	2652				
GRAND TOTAL				33279	1363	3613	87.1	5461.0	4973	4082	11059	20857				

TABLE A-6. INVENTORY AND STATUS BY TANK - SINGLE-SHELL TANKS

October 31, 2000

THESE VOLUMES ARE THE RESULT OF ENGINEERING CALCULATIONS AND MAY NOT AGREE WITH SURFACE LEVEL MEASUREMENTS

FOOTNOTES:

Total Waste is calculated as the sum of Sludge and Saltcake plus Supernate. The category "Interim Isolated (II) was changed to Intrusion Prevention (IP) in June 1993.

Stabilization information from WHC-SD-RE-TI-178 SST STABILIZATION RECORD, latest revision, or SST Stabilization or Cognizant Engineer

Porosity values are 25% for saltcake and 15% for sludge, per HNF-2978, Rev. 1, "Updated Pumpable Liquid Volume Estimates and Jet Pump Durations for Interim Stabilization of Remaining Single-Shell Tanks," September 1999, with the exception of those tanks which have been interim stabilized and the porosities recalculated.

Tanks A-105, C-105, C-106, S-111, SX-107, SX-109, SX-114, and TX-113 were updated in October 2000 issue per BBI dated October 2000.

(a) S-106 Pumping was discontinued on January 3, 2000, to allow the waste levels to stabilize, so waste porosities and final waste volumes can then be calculated to determine whether this tank meets Interim Stabilization criteria. Waste levels have not been stabilized, as of September 30, 2000.

Note: In April 2000 issue, volumes were changed to reflect HNF-2978; however, because S-106 had been pumped and was "holding" to allow waste to stabilize, the volumes should not have been changed. *In September 2000 issue, volumes were changed back to reflect actual pumping.*

(b) U-105 Following information from Cognizant Engineer.

Saltwell pumping began December 10, 1999. The waste is pumped directly to SY-102. Pumping was halted on July 13, 2000, due to jet pump failure.
Saltcake volume has been adjusted to correspond to current waste removal.
Remaining volumes are based on the original estimated volumes in HNF-2978, Rev. 1.

Total Waste: 330.5 Kgal
Supernate: 0.0 Kgal
Drainable Interstitial Liquid: 36.5 Kgal
Pumped this month: 0.0 Kgal
Total Pumped: 87.5 Kgal
Drainable Liquid Remaining: 36.5 Kgal
Pumpable Liquid Remaining: 32.5 Kgal
Sludge: 32.0 Kgal
Saltcake: 298.5 Kgal

In July 2000, a total of 1,450 gal of fluid was removed with 335 gal of water added for pump priming/equipment flushes, for a net removal of 1,095 gal of waste.
In addition, 1,907 gal of water were used as dilution and 300 gal of water were used for transfer line flushes. (No pumping since July 2000).

TABLE A-6. INVENTORY AND STATUS BY TANK - SINGLE-SHELL TANKS

October 31, 2000

THESE VOLUMES ARE THE RESULT OF ENGINEERING CALCULATIONS AND MAY NOT AGREE WITH SURFACE LEVEL MEASUREMENTS

FOOTNOTES:

(c) S-102 Following information from Cognizant Engineer

Pumping commenced March 18, 1999. Many pumping problems occurred over the following months, and the pump has been replaced several times. Pumping was interrupted again in June 2000. Remaining volumes are based on the original estimate volumes in HNF-2978, Rev. 1.

Total Waste: 492.2 Kgal
Supernate: 0.0 Kgal
Drainable Interstitial: 93.3 Kgal
Pumped this month: 0.0 Kgal
Total Pumped: 56.8 Kgal
Drainable Liquid Remaining: 93.3 Kgal
Pumpable Liquid Remaining: 88.9 Kgal
Sludge: 105.0 Kgal
Saltcake: 387.2 Kgal

During June 2000, a total of 1,857 gal of fluid was removed with 1,989 gal of water added by flushes/priming for a net addition of 132 gal of tank waste. In addition, 2,129 gal of dilution water and 245 gal of water were added for transfer line flushes. (No pumping since June 2000).

(d) U-109 Following information from Cognizant Engineer

Pumping began March 11, 2000. Saltcake volume is adjusted to correspond to current waste removal.
Remaining volumes are based on HNF-2978, Rev. 2.

Tank Waste: 402.9 Kgal
Supernate: 0.0 Kgal
Drainable Interstitial: 64.9 Kgal
Pumped this month: 3.6 Kgal
Total Pumped: 62.1 Kgal
Drainable Liquid Remaining: 64.9 Kgal
Pumpable Liquid Remaining: 55.9 Kgal
Sludge: 35.0 Kgal
Saltcake: 367.9 Kgal

During October 2000, a total of 4,551 gal of fluid was removed with 957 gal of water added by pump priming/equipment flushes, for a net removal of 3,594 gal of tank waste. In addition, 8,848 gal of dilution water and 2,315 gal of water were used for transfer line flushes.

TABLE A-6. INVENTORY AND STATUS BY TANK - SINGLE-SHELL TANKS

October 31, 2000

THESE VOLUMES ARE THE RESULT OF ENGINEERING CALCULATIONS AND MAY NOT AGREE WITH SURFACE LEVEL MEASUREMENT

FOOTNOTES:

(e) U-102 Following information from Cognizant Engineer

Pumping began in this tank on January 20, 2000. Saltcake volume is adjusted to correspond to current waste removal.
Remaining volumes are based on HNF-2978, Rev. 2.

Total Waste: 313.4 Kgal
Supernate: 0.0 Kgal
Drainable Interstitial Liquid: 44.4 Kgal
Pumped this Month: 4.9 Kgal
Total Pumped: 61.6 Kgal
Drainable Liquid Remaining: 41.4 Kgal
Pumpable Liquid Remaining: 31.4 Kgal
Sludge: 43.0 Kgal
Saltcake: 270.4 Kgal

During October 2000, a total of 5,714 gal of fluid was removed with 812 gal of water added by pump priming/equipment flushes, for a net removal of 4,902 gal of waste. In addition, 17,434 gal of water were used as dilution and 1,115 gal of water were used for transfer line flushes.

(f) SX-105 Following information from Cognizant Engineer:

Saltwell pumping began August 8, 2000.
Remaining volumes are based on HNF-2978, Rev. 2.

Tank Waste: 513.2 Kgal
Supernate: 0.0 Kgal
Drainable Interstial Liquid: 29.2 Kgal
Pumped this month: 45.0 Kgal
Total Pumped: 123.8 Kgal
Drainable Liquid Remaining: 29.2 Kgal
Pumpable Liquid Remaining: 17.2 Kgal
Sludge: 65.0 Kgal
Saltcake: 448.2 Kgal

In October 2000, a total of 45,932 gal of fluid was removed with 958 gal of water added by pump priming and system flushes, for a net removal of 44,974 gal of waste. In addition, 54,771 gal of dilution water and 2,722 gal of water for transfer lines flushes were used.

FOOTNOTES:

(g) A-101 Following information from Cognizant Engineer

Pumping began on May 6, 2000.
Remaining volumes are based on the original estimated volumes in HNF-2978, Rev. 1.

Total Waste: 876.8 Kgal
Supernate: 493.8 Kgal
Drainable Interstitial Liquid: 95.0 Kgal
Pumped this Month: 0.0 Kgal
Total Pumped: 14.1 Kgal
Drainable Liquid Remaining: 590.0 Kgal
Pumpable Liquid Remaining: 573.6 Kgal
Sludge: 3.0 Kgal
Saltcake: 380.0 Kgal

During August 2000, a total of 0 gal of fluid was removed from the tank with 273 of water added by pump priming/equiment flushes for a net removal of -273 gal of waste.
This number will be subtracted against the next waste removed.
In addition, 0 gal of water was used as dilution and 0 gal of water was used for transfer line flushes. (No pumping in October 2000).

(h) AX-101 Following information from Cognizant Engineer

Pumping began July 29, 2000.
Remaining volumes are based on the original estimated volumes in HNF-2978, Rev. 1.

Total Waste: 675.6 Kgal
Supernate: 377.6 Kgal
Drainable Interstitial Liquid: 73.7 Kgal
Pumped this month: 0.0 Kgal
Total pumped: 8.366 Kgal
Drainable Liquid Remaining: 451.8 Kgal
Pumpable Liquid Remaing: 434.6 Kgal
Sludge: 3.0 Kgal
Saltcake: 295.0 Kgal

In August 2000, a total of 7,292 gal of fluid was removed from the tank with 241 gal of water added by pump priming/equipment, for a net removal of 7,051 gal of waste.
In addition, 18,332 gal of water were used as dilution and 930 gal of water were used for transfer line flushes. (No pumping in October 2000).

TABLE A-6. INVENTORY AND STATUS BY TANK - SINGLE-SHELL TANKS

October 31, 2000

THESE VOLUMES ARE THE RESULT OF ENGINEERING CALCULATIONS AND MAY NOT AGREE WITH SURFACE LEVEL MEASUREMENTS

FOOTNOTES:

(i) U-106 Following information from Cognizant Engineer:

Pumping began August 24, 2000.
Remaining volumes are based on HNF-2978, Rev. 2.

Total Waste: 189.5 Kgal
Supernate: 0.0 Kgal
Drainable Interstitial Liquid: 31.4 Kgal
Pumped this month: 3.8 Kgal
Total Pumped: 36.4 Kgal
Drainable Liquid Remaining: 31.4 Kgal
Pumpable Liquid Remaining: 19.6 Kal
Sludge: 0.0 Kgal
Saltcake: 189.5 Kgal

In October 2000, a total of 4,162 gal of fluid was removed with a total of 412 gal of water added by pump priming/equipment flushes, for a net removal of 3,750 gal of waste.
In addition, 16,862 gal of water were used as dilution and 355 gal of water were used for transfer line flushes.

(j) S-109 Following informatio from Cognizant Engineer:

Pumping began September 23, 2000.
Remaining volumes are based on HNF-2978, Rev. 2.

Total Waste: 485.8 Kgal
Supernate: 0.0 Kgal
Drainable Interstitial Liquid: 72.2 Kgal
Pumped this Month: 18.2 Kgal
Total Pumped: 132.2 Kgal (includes 111.0 Kgal pumped in 1979)
Drainable Liquid Remaining: 72.2 Kgal
Pumpable Liquid Remaining: 61.8 Kgal
Sludge: 13.0 Kgal
Saltcake: 472.8 Kgal

In October 2000, a total of 20,146 gal of fluid was removed with 1,946 gal of water added by pump priming/system flushes, for a net removal of 18,200 gal of waste.
In addition, 1,342 gal of water were used for transfer line flushes.

TABLE A-6. INVENTORY AND STATUS BY TANK - SINGLE-SHELL TANKS

October 31, 2000

THESE VOLUMES ARE THE RESULT OF ENGINEERING CALCULATIONS AND MAY NOT AGREE WITH SURFACE LEVEL MEASUREMENTS

FOOTNOTES :

(k) SX-103 Following information from Cognizant Engineer:

Pumping began October 26, 2000.
Remaining volumes are based on HNF-2978, Rev. 2.

Total Waste: 622.4 Kgal
Supernate: 0.0 Kgal
Drainable Interstitial Liquid: 135.4 Kgal
Pumped this month: 11.6 Kgal
Total Pumped: 11.6 Kgal
Drainable Liquid Remaining: 135.4 Kgal
Pumpable Liquid Remaining: 120.4 Kal
Sludge: 115.0 Kgal
Saltcake: 507.4 Kgal

In October 2000, a total of 12,128 gal of fluid was removed with a total of 557 gal of water added by pump priming and saltwell screen installation, for a net removal of 11,571 gal of waste.
In addition, 10,040 gal of water were used as dilution and 170 gal of water were used for transfer line flushes.

APPENDIX B

PERFORMANCE SUMMARY

TABLE B-1. SUMMARY OF WASTE TRANSACTIONS IN THE DOUBLE-SHELL TANK (DST) SYSTEM

October 31, 2000

All volumes in Kgallons

- The DST system received waste additions from SST Stabilization, 151-AZ, & misc. water in October.
- There was a net change of +198,000 gallons in the DST system for October 2000.
- The total DST inventory as of October 31, 2000 was 20.653 million gallons.
- There were 0 Kgals of Saltwell Liquid (SWL) pumped to the East Area DSTs (101-AN) in October.
- There were ~222 Kgals of Saltwell Liquid (SWL) pumped to the West Area DSTs (102-SY) in October. ~13 Kgals of the SWL volume can be attributed to DCRT 244-TX transfer to Tank 102-SY (10/25/00).
- The SWL numbers are preliminary and are subject to change once cognizant engineers do a validation, the volumes reported contain actual waste volume plus any water added for dilution and transfer line flushes.
- The projected "DST Waste Receipts", "Saltwell Pumping Volumes" and "Waste Inventories" depicted in this report were updated this month, as supplied by cognizant engineers.
- The solids volumes reported for Tank 103-SY were inadvertently entered into the wrong waste type category following the last waste charaterization update. This report contains the corrected solids volumes for Tank 103-SY.
- The waste type designator for Tanks 106-AP, 107-AP and 102-SY were changed this month (DN to DC). The change reflect recent waste transfers of assumed "Dilute Complexed" waste from SST stabilization and Tank 101-SY remediation activities.
- The solids volume in Tanks 101-AW, 102-AW, 102-AY, 101-AZ, 102-AZ and 101-SY were updated this month. Reference for solids updates is an e-mail message from Thuy Tran, dated 11/14/00; "BBI updates made for the 3rd & 4th quarter of FY-00."

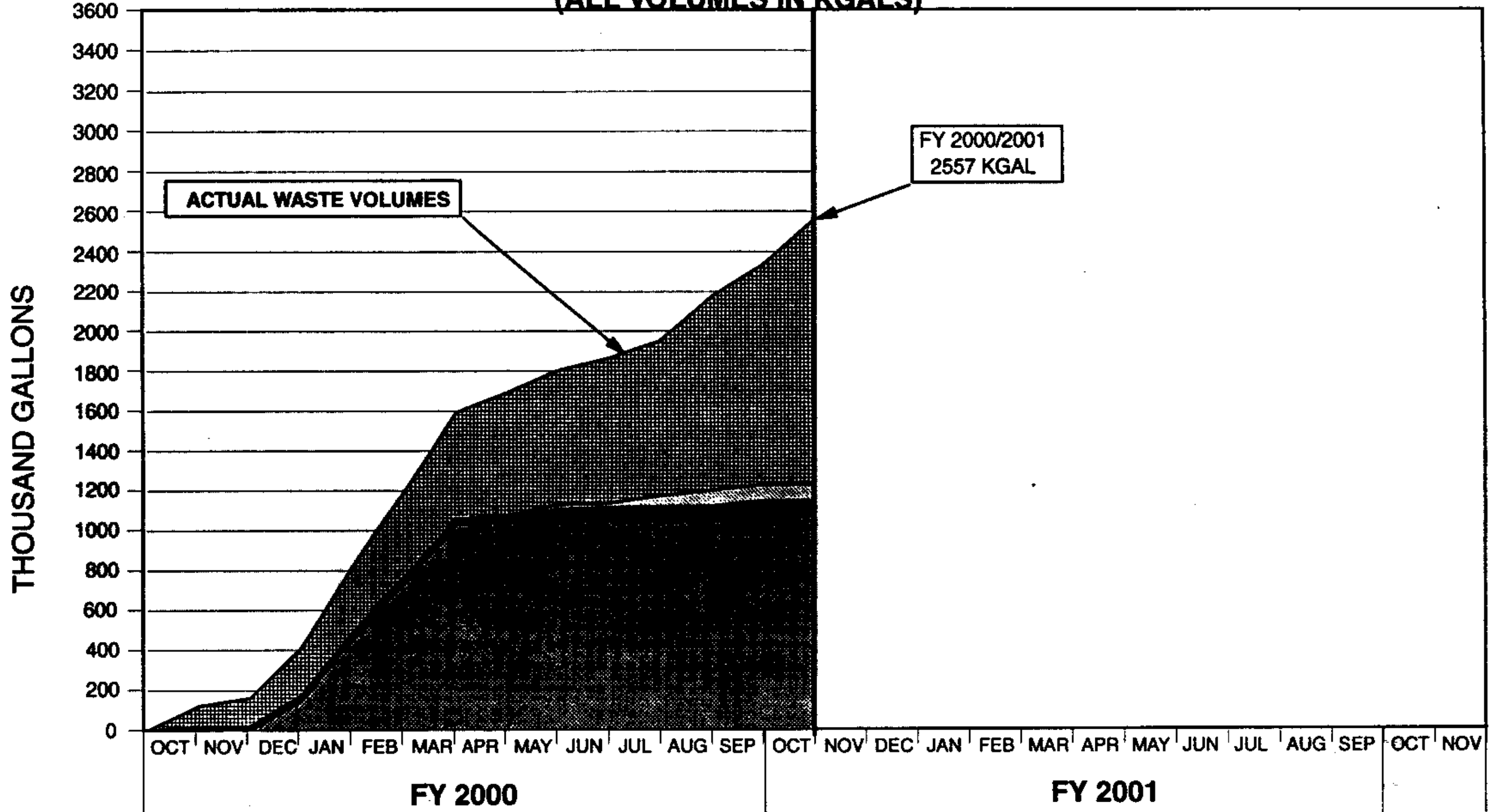
OCTOBER 2000 DST WASTE RECEIPTS					
FACILITY GENERATIONS		OTHER GAINS ASSOCIATED WITH		OTHER LOSSES ASSOCIATED WITH	
SWL (West)	+209 Kgal (2SY)	SLURRY	+0 Kgal	SLURRY	-4 Kgal
244-TX	13 Kgal (2SY)	CONDENSATE	+6 Kgal	CONDENSATE	-7 Kgal
TOTAL	+222 Kgal	INSTRUMENTATION	+0 Kgal	INSTRUMENTATION	-9 Kgal
		UNKNOWN	+1 Kgal	UNKNOWN	-11 Kgal
		TOTAL=	+7 Kgal	TOTAL=	-31 Kgal

PROJECTED VERSUS ACTUAL WASTE VOLUMES	ACTUAL DST WASTE RECEIPTS	PROJECTED DST WASTE RECEIPTS (1)	MISC. DST CHANGES (+/-)	PROJECTED WVR (1)	NET DST CHANGE	TOTAL DST VOLUME
OCT00	222	155	-24	0	198	20653
NOV00		262		0		
DEC00		300		0		
JAN01		397		0		
FEB01		303		0		
MAR01		-283		-684		
APR01		321		0		
MAY01		302		0		
JUN01		334		0		
JUL01		296		0		
AUG01		289		0		
SEP01		282		0		

(1): The "PROJECTED DST WASTE RECEIPTS" and "WVR" numbers were updated in October 2000, the projected volumes will be updated as new or more accurate information is obtained. The projected volumes reported are the most current available, as supplied by cognizant engineers.

242-A Evaporator Waste Volume Reduction:	
Campaign 94-1 (04/15/94 - 06/13/94)	-2417
Campaign 94-2 (09/22/94 - 11/18/94)	-2787
Campaign 95-1 (06/09/95 - 07/26/95)	-2161
Campaign 96-1 (05/07/96 - 05/25/96)	-1117
Campaign 97-1 (03/24/97 - 04/02/97)	-351
Campaign 97-2 (09/16/97 - 09/30/97)	-653
Campaign 99-1 (07/24/99 - 08/15/99)	-818
Campaign 00-1 (04/20/00 - 05/05/00)	-682
Total waste reduction (WVR) since restart on 4/15/94	-10986

COMPARISON OF WASTE VOLUME GENERATIONS FOR HANFORD FACILITIES
(ALL VOLUMES IN KGALS)



	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV
SWL WEST	106	36	96	99	92	108	80	56	54	51	197	132	222													
SWL EAST	14	0	0	0	0	0	0	10	0	31	27	0	0													
100 AREA	0	0	0	0	0	0	0	0	0	0	0	0	0													
PFP	0	0	0	0	0	0	0	0	0	0	0	0	0													
106-C	0	0	0	0	0	0	0	0	0	0	0	0	0													
3/400 AREA	0	0	0	0	0	0	0	0	0	0	0	0	0													
S PLANT	0	0	0	0	0	0	0	0	0	0	0	0	0													
T PLANT	0	0	0	0	0	0	0	0	0	0	0	0	0													
TANK FARMS	4	3	6	0	0	0	1	46	8	5	2	1	0													
B PLANT	0	0	0	0	0	0	0	0	0	0	0	0	0													
WESF	0	0	0	0	0	0	0	0	0	0	0	0	0													
OTHER	0	0	146	312	278	293	15	0	0	0	0	26	0													

NOTE: The Other Category is for Waste Generations from, Evaporator Training, Pressure Tests, Cross-Site Transfers and Tank 101-SY remediation work

FACILPAC

FIGURE B-1. COMPARISON OF WASTE VOLUME GENERATIONS FOR HANFORD FACILITIES
(All volumes in Kgals)

APPENDIX C

DOUBLE-SHELL TANK WASTE TYPE AND SPACE ALLOCATION

Table C-1. Double-Shell Tank Waste Inventory - October 31, 2000

TOTAL AVAILABLE DST SPACE	
NON-AGING =	27360
AGING =	3920
TOTAL=	31280

MONTHLY INVENTORY CHANGE	
09/00 TOTAL	20456
10/00 TOTAL	20653
CHANGE=	196

TANK NAME	WASTE TYPE	TOTAL INVENTORY (1)	TOTAL SUPERNATE	TOTAL SOLIDS (3)	SALTCAKE (2)	SALTCAKE LIQUID	SLUDGE (2)	SLUDGE LIQUID	REMAINING UNUSED TANK SPACE
241-AN-101	DN	225	225	0	0	0	0	0	915
241-AN-102	CC	1055	966	89	89	22	0	0	85
241-AN-103	DSS	957	500	457	457	114	0	0	183
241-AN-104	DSSF	1052	603	449	449	112	0	0	88
241-AN-105	DSSF	1128	639	489	489	122	0	0	12
241-AN-106	CC	38	21	17	17	4	0	0	1102
241-AN-107	CC	1042	796	247	247	62	0	0	98
241-AP-101	DSSF	1114	1114	0	0	0	0	0	26
241-AP-102	CP	1090	1090	0	0	0	0	0	50
241-AP-103	CC	283	283	0	0	0	0	0	857
241-AP-104	CC	1110	1110	0	0	0	0	0	30
241-AP-105	DSSF	1136	1047	89	89	22	0	0	4
241-AP-106	DC	623	623	0	0	0	0	0	517
241-AP-107	DC	443	443	0	0	0	0	0	697
241-AP-108	DN	33	33	0	0	0	0	0	1107
241-AW-101	DSSF	1127	752	375	375	94	0	0	13
241-AW-102	DN	64	34	30	30	8	0	0	1076
241-AW-103	NCRW	509	146	363	47	12	316	79	631
241-AW-104	DN	1118	887	231	231	58	0	0	22
241-AW-105	NCRW	427	172	255	0	0	255	36	713
241-AW-106	DSSF	741	502	239	239	60	0	0	399
241-AY-101	DC	137	29	108	0	0	108	16	843
241-AY-102	DN	588	404	184	0	0	184	28	392
241-AZ-101	NCAW	910	858	52	0	0	52	8	70
241-AZ-102	NCAW	995	890	105	0	0	105	16	0
241-SY-101	CC	970	887	83	83	21	0	0	170
241-SY-102	DC	997	926	71	0	0	71	11	143
241-SY-103	CC	741	375	366	366	92	0	0	399
		20653	16364	4289	3208	803	1091	194	10642

NOTE: All Volumes in Kilo-Gallons (Kgals)

(1) Total Inventory = (Total Supernate + Total Solids)

(2) Saltcake includes Saltcake Liquids; Sludge includes Sludge Liquid

(3) Total Solids = (Saltcake + Sludge)

Tank Space Usage

TANK SPACE CHANGE	
09/00 TANK SPACE	10836
10/00 TANK SPACE	10642
CHANGE=	-193

OPERATIONAL SPACE	
AP-108=	1107
AW-102=	1076
AW-105=	713
AW-106=	399
SY-102=	143
TOTAL=	3438

RESTRICTED SPACE	
AN-102=	85
AN-107=	98
AP-102=	50
AZ-101=	70
AZ-102=	0
TOTAL=	303

WATCH LIST SPACE	
AN-103=	183
AN-104=	88
AN-105=	12
AW-101=	13
SY-101=	170
SY-103=	399
TOTAL=	865

NON-ALLOCATED SPACE	
AN-101=	915
AN-106=	1102
AP-101=	26
AP-103=	857
AP-104=	30
AP-105=	4
AP-106=	517
AP-107=	697
AW-103=	631
AW-104=	22
AY-101=	843
AY-102=	392
TOTAL=	6036
EMERGENCY SPACE	-1140
LAW or HLW RETURN	-1140
REMAINING SPACE	3756

Inventory Calculation by Waste Type:

DILUTE SUPERNATE (DN)	
AN-101=	225
AP-108=	33
AW-102=	34
AW-103=	146
AW-104=	887
AW-105=	172
AY-102=	404
TOTAL DN=	1901
TOTAL SOLIDS=	1063

SLURRY SUPERNATE (DSS/DSSF)	
AN-103=	500
AN-104=	603
AN-105=	639
AP-101=	1114
AP-105=	1047
AW-101=	752
AW-106=	502
TOTAL DSS/DSSF=	5157
TOTAL SOLIDS=	2096

COMPLEXED SUPERNATE (DC\CC)	
AN-102=	966
AN-106=	21
AN-107=	796
AP-103=	283
AP-104=	1110
AP-106=	623
AP-107=	443
AY-101=	29
SY-101=	887
SY-102=	926
SY-103=	375
TOTAL DC/CC=	6459
TOTAL SOLIDS=	981

AGING SUPERNATE (AW)	
AZ-101=	858
AZ-102=	890
TOTAL AW=	1748
TOTAL SOLIDS=	157

PHOSPHATE SUPERNATE (CP)	
TOTAL CP=	1090

DST SLUDGE / SALTCAKE LIQUID			
AN-102=	22	AW-104=	58
AN-103=	114	AW-105=	36
AN-104=	112	AW-106=	60
AN-105=	122	AY-101=	16
AN-106=	4	AY-102=	28
AN-107=	62	AZ-101=	8
AP-105=	22	AZ-102=	16
AW-101=	94	SY-101=	21
AW-102=	8	SY-102=	11
AW-103=	91	SY-103=	92
TOTAL SLUDGE / SALTCAKE LIQUID=			997

GRAND TOTALS	
DILUTE SUPERNATE (DN/DC) =	3893
SLURRY (DSS/DSSF)=	5157
CONCENTRATED COMPLEXED (CC)=	4466
CONCENTRATED PHOSPHATE (CP)=	1090
AGING SUPERNATE (AW)=	1748
DST SOLIDS (NO LIQUID)=	3302
DST SLUDGE / SALTCAKE LIQUID=	997
TOTAL=	20653

Table C-2. Double-Shell Tank Waste Inventory - October 31, 2000

TOTAL AVAILABLE USABLE AS OF OCTOBER 31, 2000=			**10642 KGALS**
WATCH LIST TANK SPACE:	**TANK**	**WASTE TYPE**	**AVAILABLE SPACE**
Unusable DST Headspace - Due to Special Restrictions Placed on the Tanks, as Stated in the "Wyden Bill"	AN-103	DSS	183 KGALS
	AN-104	DSSF	88 KGALS
	AN-105	DSSF	12 KGALS
	AW-101	DSSF	13 KGALS
	SY-101	CC	170 KGALS
	SY-103	CC	399 KGALS
		TOTAL=	**865 KGALS**
AVAILABLE TANK SPACE=			10642 KGALS
MINUS WATCH LIST SPACE=			-865 KGALS
TOTAL AVAILABLE SPACE AFTER WATCH LIST SPACE DEDUCTIONS=			**9777 KGALS**
RESTRICTED TANK SPACE:	**TANK**	**WASTE TYPE**	**AVAILABLE SPACE**
DST Headspace Available to Store Only Specific Waste Types			
	AN-102	CC	85 KGALS
	AN-107	CC	98 KGALS
	AP-102	CP	50 KGALS
	AZ-101	AW	70 KGALS
	AZ-102	AW	0 KGALS
		TOTAL=	**303 KGALS**
AVAILABLE SPACE AFTER WATCH LIST SPACE DEDUCTIONS=			9777 KGALS
MINUS RESTRICED SPACE=			-303 KGALS
TOTAL AVAILABLE SPACE AFTER RESTRICTED SPACE DEDUCTIONS=			**9474 KGALS**
OPERATIONAL TANK SPACE	**TANK**	**WASTE TYPE**	**AVAILABLE SPACE**
DST Headspace Available For Facility Generated Waste and 242-A Evaporator Operations	AP-108	DN	1107 KGALS
	AW-102	DN	1076 KGALS
	AW-105	NCRW	713 KGALS
	AW-106	DSSF	399 KGALS
	SY-102	DC	143 KGALS
		TOTAL=	**3438 KGALS**
			9474 KGALS
MINUS OPERATIONAL SPACE=			-3438 KGALS
AVAILABLE SPACE AFTER RESTRICTED SPACE DEDUCTIONS=			**6036 KGALS**
TOTAL AVAILABLE SPACE AFTER OPER	**TANK**	**WASTE TYPE**	**AVAILABLE SPACE**
NON-ALLOCATED TANK SPACE			
Non-Alloctated DST Headspace	AN-101	DN	915 KGALS
	AN-106	CC	1102 KGALS
	AP-101	DSSF	26 KGALS
	AP-103	CC	857 KGALS
	AP-104	CC	30 KGALS
	AP-105	DSSF	4 KGALS
	AP-106	DC	517 KGALS
	AP-107	DC	697 KGALS
	AW-103	NCRW	631 KGALS
	AW-104	DN	22 KGALS
	AY-101	DC	843 KGALS
	AY-102	DN	392 KGALS
TOTAL NON-ALLOCATED TANK SPACE=			**6036 KGALS**
EMERGENCY TANK SPACE			**-1140 KGALS**
LAW or HLW RETURN SPACE:			**-1140 KGALS**
TOTAL TANK SPACE AVAILABLE AFTER ALL DEDUCTIONS			**3756 KGALS**

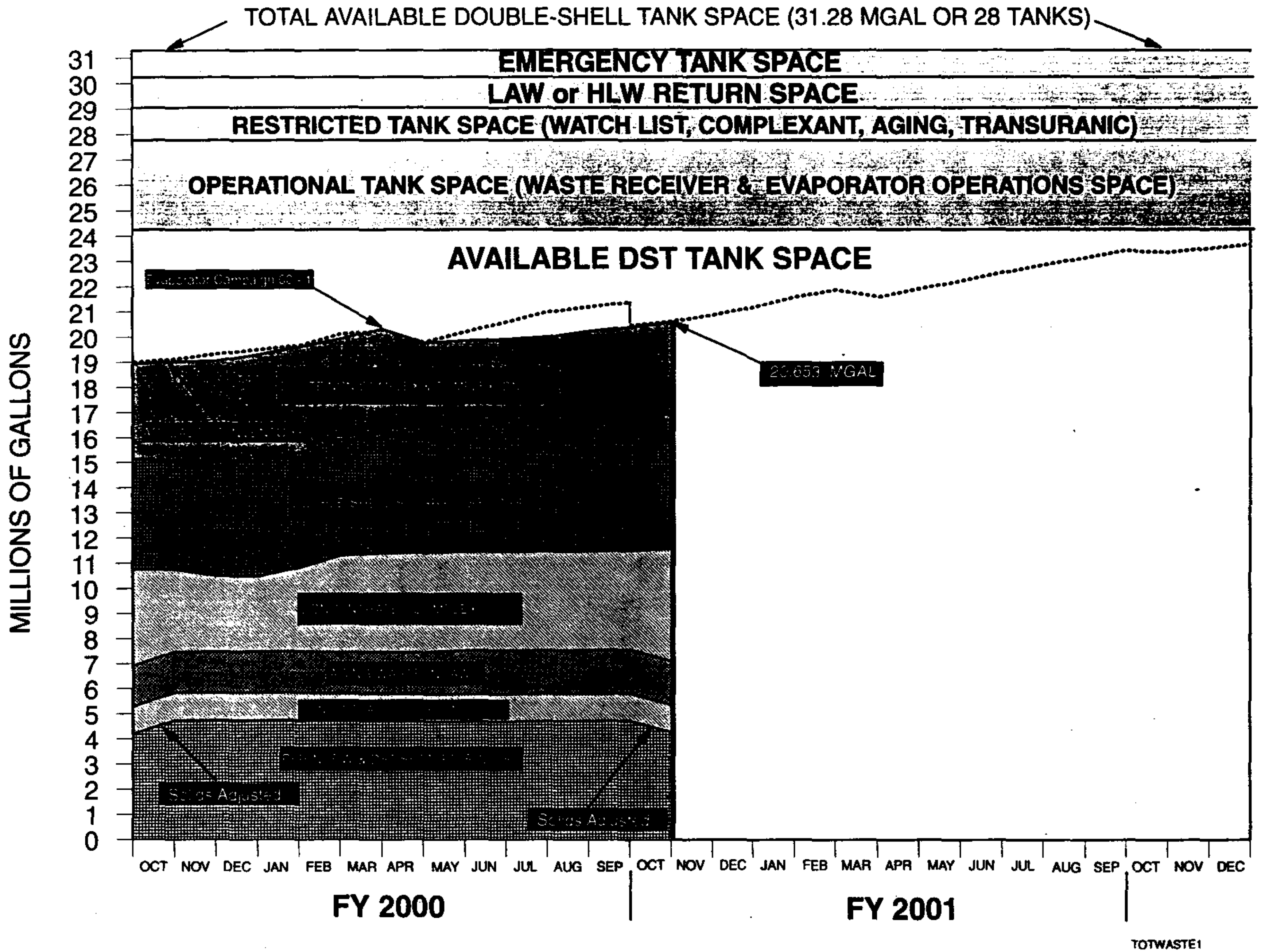


FIGURE C-1. TOTAL DOUBLE-SHELL TANK INVENTORY

APPENDIX D

WASTE TANK SURVEILLANCE MONITORING TABLES

TABLE D-1. TEMPERATURE MONITORING IN WATCH LIST TANKS (Sheet 1 of 2)

October 31, 2000

These tanks have been identified as Watch List Tanks in accordance with Public Law 101-510, Section 3137, "*Safety Measures for Waste Tanks at Hanford Nuclear Reservation,*" (1990), because they "... may have a serious potential for release of high-level waste due to uncontrolled increases in temperature or presssure."

All Watch List tanks are reviewed for increasing temperature trends. Temperatures in these tanks are monitored by the Tank Monitor And Control System (TMACS), unless indicated otherwise.

Temperatures are taken in the waste unless in-waste thermocouples are out of service. Temperatures below are the highest temperatures recorded in these tanks during this month.

Temperatures in Degrees F.

HYDROGEN (FLAMMABLE GAS)					
Single-Shell Tanks			Double-Shell Tanks		
Tank No.	Temp.	Officially Added to Watch List	Tank No.	Temp.	Officially Added to Watch List
A-101	144	1/91	AN-103	105	1/91
AX-101	128	1/91	AN-104	104	1/91
AX-103	109	1/91	AN-105	100	1/91
S-102	99	1/91	AW-101	99	6/93
S-111	89	1/91	SY-101	98	1/91
S-112	84	1/91	SY-103	96	1/91
SX-101	130	1/91	6 DSTs		
SX-102	140	1/91			
SX-103	158	1/91			
SX-104	139	1/91			
SX-105	165	1/91			
SX-106	99	1/91			
SX-109 (1)	135	1/91		19 Single-Shell Tanks	
T-110	65	1/91		6 Double-Shell Tanks	
U-103	87	1/91		25 Tanks on Watch List	
U-105	89	1/91			
U-107	78	12/93			
U-108	86	1/92			
U-109	85	1/91			
19 SSTs					

All tanks were removed from the Ferrocyanide Watch List and 18 tanks from the Organics Watch List.
Tank C-106 was removed from the High Heat Load Watch List on December 16, 1999.
The remaining two tanks (C-102 and C-103) were removed from the Organics Watch List in August 2000.

TABLE D-1. TEMPERATURE MONITORING IN WATCH LIST TANKS
(sheet 2 of 2)

Notes:

Unreviewed Safety Question (USQ):
When a USQ is declared, special controls are required, and work in the tanks is limited. There are currently no USQs on single-shell tanks. There is a USQ on double-shell tank SY-101 for liquid level increase.

Hydrogen/Flammable Gas:
These tanks are suspected of having a significant potential for hydrogen/flammable gas generation, entrapment, and episodic release. The USQ associated with these tanks was closed in September 1998. Twenty-five tanks (19 SST and 6 DST) remain on the Hydrogen Watch List.

Organic Salts:
These tanks contain concentrations of organic salts ≥3 weight% of total organic carbon (TOC)(equivalent to 10 wt% sodium acetate). The USQ associated with these tanks was closed in October 1998, and 18 organic complexant tanks were removed from the Organic Watch List in December 1998. The remaining two organic salts tank (C-102 and C-103) were removed from the Organic Watch List in August 2000.

High Heat:
These tanks contain heat generating strontium-rich sludge and require drainable liquid to be maintained in the tank to promote cooling. There are currently nine tanks on the High Heat Load List but no tanks on the High Heat Load Watch List.

Active ventilation:
There are 15 single-shell tanks on active ventilation (seven are on the Watch List as indicated by an asterisk):

C-105	SX-107
C-106 (2)	SX-108
SX-101 *	SX-109 * (1)
SX-102 *	SX-110
SX-103 *	SX-111
SX-104 *	SX-112
SX-105 *	SX-114
SX-106 *	

Footnotes:

(1) Tank SX-109 is on the Hydrogen Watch List as it has the potential for flammable gas accumulation only because other SX tanks vent through it.

(2) Tank C-106 was removed from the High Heat Load Watch List on December 16, 1999.

(3) Tanks C-102 and C-103 were removed from the Organics Salts Watch List on August 23, 2000.

TABLE D-2. TEMPERATURE MONITORING IN NON-WATCH LIST TANKS

Octoer 31, 2000

SINGLE-SHELL TANKS WITH HIGH HEAT LOADS (>26,000 Btu/hr)

Nine tanks have high heat loads for which temperature surveillance requirements are established by HNF-SD-WM-TSR-006, Rev 1, *Tank Waste Remediation System Technical Safety Requirements,* December 1999. In an analysis, WHC-SD-WM-SARR-010, Rev 1, *Heat Removal Characteristics of Waste Storage Tanks,* Kummerer, 1995, it was estimated that nine tanks have heat sources >26,000 Btu/hr, which is the new parameter for determining high heat load tanks. See also document HNF-SD-WM-BIO-001, Rev 1, *Tank Waste Remediation System Basis for Interim Operation,* Noorani, 1998.

Temperatures in these tanks did not exceed TSR requirements for this month, and are monitored by the Tank Monitor and Control System (TMACS), unless indicated otherwise. All high heat load tanks are on active ventilation.

Tank No.	Temperature (F.)	
C-106 (1)	76	(Riser #8)
SX-103	158	
SX-107	166	
SX-108	184	
SX-109 (2)	135	
SX-110	165	
SX-111	185	
SX-112	150	
SX-114	175	
9 Tanks		

Notes:

(1) C-106 was removed from the High Heat Load Watch List on December 16, 1999. The final thermal analysis report, RPP-6463, Rev. 0, "Thermal Analysis for Tanks 241-AY-102 and C-106," was issued August 9, 2000. The report concluded that the best estimate heat load for C-106 is between 7,000 and 11,000 Btu/hr. Although it no longer meets the criteria for a high heat load tank, it will take an AB change to revise the temperature control limits and monitoring frequency. The AB Amendment request is pending review by ORP.

(2) SX-109 is on the Hydrogen Watch List as it has the potential for flammable gas accumulation only because the other SX tanks vent through it.

SINGLE-SHELL TANKS WITH LOW HEAT LOADS (<26,000 Btu/hr)

There are 114 low heat load non-watch list tanks. Temperatures in tanks connected to TMACS are monitored by TMACS; temperatures in those tanks not yet connected to TMACS are manually taken semiannually in January and July. Temperatures obtained semiannually have been within historical ranges for the applicable tank.

No temperatures have been obtained for several years in the tanks listed below. Most of these tanks have no thermocouple tree.

Tank No.	Tank No.
BX-104	TX-101
BY-102	TX-110
BY-109	TX-114
C-204	TX-116
SX-115	TX-117
T-102	U-104
T-105	

TABLE D-3. ADDITIONS/DELETIONS TO WATCH LISTS BY YEAR
October 31, 2000

Added/Deleted dates may differ from dates that tanks were officially added to the Watch Lists. (See Table A-1).

	Ferrocyanide		Hydrogen		Organics		High Heat		Total Tanks SST	Total Tanks DST	Total Tanks Total
1/91 Original List -Response to Public Law 101-5	23		23		8		1		47	5	52
Added 2/91 (revision to Original List)	1	T-107							1		1
Total - December 31, 1991	24		23		8		1		48	5	53
Added 8/92			1	AW-101						1	1
Total - December 31, 1992	24		24		8		1		48	6	54
Added 3/93					1	U-111			1		
Deleted 7/93	-4	(BX-110) (BX-111) (BY-101) (T-101)							-4		
Added 12/93			1	(U-107)					0		
Total - December 31, 1993	20		25		9		1		45	6	51
Added 2/94					1	T-111			1		
Added 5/94					10	A-101 AX-102 C-102 S-111 SX-103 TY-104 U-103 U-105 U-203 U-204			4		
Deleted 11/94	-2	(BX-102) (BX-106)							-2		
Total - December 31, 1995	18		25		20		1		48	6	54
Deleted 6/96	-4	(C-108) (C-109) (C-111) (C-112)							-4		
Deleted 9/96	-14	(BY-103) (BY-104) (BY-105) (BY-106) (BY-107) (BY-108) (BY-110) (BY-111) (BY-112) (T-107) (TX-118) (TY-101) (TY-103) (TY-104)							-12		
Deleted 12/98					-18	(A-101) (AX-102) (B-103) (S-102) (S-111) (SX-103) (SX-106) (T-111) (TX-105) (TX-118) (TY-104) (U-103) (U-105) (U-106) (U-107) (U-111) (U-203) (U-204)			-10		
Total - December 31, 1998	0		25		2		1		22	6	28
Deleted 12/99							-1	(C-106)	-1		
Deleted 08/00					-1	(C-102)			-1		
					-1	(C-103)			-1		
Total - October 31, 2000	0		25		0		0		19	6	25

Eighteen of the 20 tanks were removed from the Organics Watch List in December 1998: the last two were removed August 2000; eight of the eighteen tanks are still on the Hydrogen Watch List, which is the only remaining Watch List.

TABLE D-4. SINGLE-SHELL TANKS MONITORING COMPLIANCE STATUS

149 TANKS (Sheet 1 of 6)

October 31, 2000

The following table indicates whether Single-Shell tank monitoring was in compliance with the requirements as specified in the applicable documents as of the last day of the applicable month:

NOTE:
All Watch List and High Heat tank temperature monitoring is in compliance. (4)
All Dome Elevation Survey monitoring is in compliance
All Psychrometrics monitoring is in compliance (2).
Drywell monitoring no longer required (5).
In-tank photos/videos are taken "as needed"

LEGEND:	
(Shaded)	= in compliance with all applicable documentation
N/C	= noncompliance with applicable documentation
O/S	= Out of Service
Neutron	= LOW readings taken by Neutron probe
POP	= Plant Operating Procedure, TO-040-650
MT/FIC/ ENRAF	= Surface level measurement devices
OSD	= Operating Spec. Doc., OST-T-151-00013, 00030, 00031
N/A	= Not applicable (not monitored, or no monitoring schedule)
None	= Applicable equipment not installed
FSAR/TSR	= Final Safety Analysis Report/Technical Safety Requirements

Tank Number	Tank Category		Temperature Readings (4)	Primary Leak Detection Source (5)	Surface Level Readings (1) (OSD)			LOW Readings (OSD)(5,7)
	Watch List	High Heat			MT	FIC	ENRAF	Neutron
A-101	X			LOW	None	None		
A-102				None	None		None	None
A-103				LOW	None	None		
A-104				None	None	None		None
A-105				None		None	None	None
A-106				None	None	None		None
AX-101	X			LOW	None	None		(9)
AX-102				None	None	None		None
AX-103	X			None	None	None		None
AX-104				None	None	None		None
B-101				None	None	None		None
B-102				ENRAF	None	None		None
B-103				None	None	None		O/S
B-104				LOW	None	None		
B-105				LOW	None	None		
B-106				ENRAF	None	None		None
B-107				None	None	None		None
B-108				None	None	None		None
B-109				None	None	None		None
B-110				LOW	None	None		O/S (12)
B-111				LOW	None	None		
B-112				ENRAF	None	None		None
B-201				ENRAF	None	None		None
B-202				ENRAF	None	None		None
B-203				ENRAF	None	None		None
B-204				ENRAF	None	None		None
BX-101				ENRAF	None	None		None
BX-102				None	None	None		None
BX-103				ENRAF	None	None		None
BX-104			None	ENRAF	None	None		None
BX-105				None	None	None		None
BX-106				ENRAF	None	None		None
BX-107				ENRAF	None	None		None

TABLE D-4. SINGLE-SHELL TANKS MONITORING COMPLIANCE STATUS

149 TANKS (Sheet 2 of 6)

Tank Number	Tank Category		Temperature Readings (4)	Primary Leak Detection Source (5)	Surface Level Readings (1) (OSD)			LOW Readings (OSD)(5,7)
	Watch List	High Heat			MT	FIC	ENRAF	Neutron
BX-108				None	None	None		None
BX-109				None	None	None		None
BX-110				None	None	None		None
BX-111				LOW	None	None		
BX-112				ENRAF	None	None		None
BY-101				LOW		None	None	
BY-102			None	LOW	None	None		
BY-103				LOW	None	None		
BY-104				LOW		None	None	
BY-105				LOW		None	None	
BY-106				LOW		None	None	
BY-107				LOW		None	None	
BY-108				None		None	None	None
BY-109			None	LOW	None	O/S	None	
BY-110				LOW	None	None		
BY-111				LOW	None	None		
BY-112				LOW		None	None	
C-101				None		None	None	None
C-102 (10)				None	None		None	None
C-103 (10)				ENRAF	None	None		None
C-104				None	None	None		None
C-105				None	None	None		None
C-106 (3)		X		ENRAF	None	None		None
C-107				ENRAF	None	None		None
C-108				None		None	None	None
C-109				None		None	None	None
C-110				MT		None	None	None
C-111				None		None	None	None
C-112				None	None	None		None
C-201				None		None	None	None
C-202				None		None	None	None
C-203				None		None	None	None
C-204			None	None		None	None	None
S-101				ENRAF	None	None		
S-102	X			ENRAF	None	None		
S-103				ENRAF	None	None		
S-104				LOW	None	None		
S-105				LOW	None	None		
S-106				ENRAF	None	None		
S-107				ENRAF	None	None		None
S-108				LOW	None	None		
S-109				LOW	None	None		
S-110				LOW	None	None		
S-111	X			ENRAF	None	None		
S-112	X			LOW	None	None		
SX-101	X			LOW	None	None		
SX-102	X			LOW	None	None		
SX-103	X	X		LOW	None	None		
SX-104	X			LOW	None	None		
SX-105	X			LOW	None	None		O/S (11)
SX-106	X			LOW	None	None		
SX-107		X		None	None	None		None
SX-108		X		None	None	None		None

TABLE D-4. SINGLE-SHELL TANKS MONITORING COMPLIANCE STATUS

149 TANKS (Sheet 3 of 6)

Tank Number	Tank Category: Watch List	Tank Category: High Heat	Temperature Readings (4)	Primary Leak Detection Source (5)	Surface Level Readings (1) (OSD): MT	Surface Level Readings (1) (OSD): FIC	Surface Level Readings (1) (OSD): ENRAF	LOW Readings (OSD)(5,7): Neutron
SX-109	X	X		None	None	None		None
SX-110		X		None	None	None		None
SX-111		X		None	None	None		None
SX-112		X		None	None	None		None
SX-113				None	None	None		None
SX-114		X		None	None	None		None
SX-115			None	None	None	None		None
T-101				None	None	None		None
T-102			None	ENRAF	None	None		None
T-103				None	None	None		None
T-104				LOW	None	None		
T-105			None	None	None	None		None
T-106				None	None	None		None
T-107				ENRAF	None	None		None
T-108				ENRAF	None	None		None
T-109				None	None	None		None
T-110	X			LOW	None	None		
T-111				LOW	None	None		
T-112				ENRAF	None	None		None
T-201				MT		None	None	None
T-202				MT		None	None	None
T-203				None		None	None	None
T-204				MT		None	None	None
TX-101			None	ENRAF	None	None		None
TX-102				LOW	None	None		
TX-103				None	None	None		None
TX-104				None	None	None		None
TX-105				None	None	None		None (6)
TX-106				LOW	None	None		
TX-107				None	None	None		None
TX-108				None	None	None		None
TX-109				LOW	None	None		
TX-110			None	LOW	None	None		
TX-111				LOW	None	None		
TX-112				LOW	None	None		
TX-113				LOW	None	None		
TX-114			None	LOW	None	None		
TX-115				LOW	None	None		
TX-116			None	None	None	None		None
TX-117			None	LOW	None	None		
TX-118				LOW	None	None		
TY-101				None	None	None		None
TY-102				ENRAF	None	None		None
TY-103				LOW	None	None		
TY-104				ENRAF	None	None		None
TY-105				None	None	None		None
TY-106				None	None	None		None
U-101				MT		None	None	None
U-102				LOW	None	None		
U-103	X			ENRAF	None	None		
U-104			None	None		None	None	None
U-105	X			ENRAF	None	None		
U-106				ENRAF	None	None		

TABLE D-4. SINGLE-SHELL TANKS MONITORING COMPLIANCE STATUS

149 TANKS (Sheet 4 of 6)

Tank Number	Tank Category: Watch List	Tank Category: High Heat	Temperature Readings (4)	Primary Leak Detection Source (5)	Surface Level Readings (1) (OSD): MT	Surface Level Readings (1) (OSD): FIC	Surface Level Readings (1) (OSD): ENRAF	LOW Readings (OSD)(5,7): Neutron
U-107	X			ENRAF	None	None		
U-108	X			LOW	None	None		
U-109	X			ENRAF	None	None		
U-110				None	None	None		None
U-111				LOW	None	None		
U-112				None		None	None	None
U-201				MT		None	None	None
U-202				MT		None	None	None
U-203				None	None	None		None
U-204				ENRAF	None	None		None
Catch Tanks and Special Surveillance Facilities								
A-302-A	N/A	N/A	N/A	(6)	None	None		None
A-302-B	N/A	N/A	N/A	(6)		None	None	None
ER-311	N/A	N/A	N/A	(6)	None	None		None
AX-152	N/A	N/A	N/A	(6)		None	None	None
AZ-151	N/A	N/A	N/A	(6)	None	O/S (10)	None	None
AZ-154	N/A	N/A	N/A	(6)		None	None	None
BX-TK/SMP	N/A	N/A	N/A	(6)		None	None	None
A-244 TK/SMP	N/A	N/A	N/A	(6)	None	None	None	None
AR-204	N/A	N/A	N/A	(6)			None	None
A-417	N/A	N/A	N/A	(6)	None	None	None	None
A-350	N/A	N/A	N/A	(6)	None	None	None	None
CR-003	N/A	N/A	N/A	(6)	None	None	None	None
Vent Sta.	N/A	N/A	N/A	(6)		None	None	None
244-S TK/SMP	N/A	N/A	N/A	(6)	None	None	None	None
S-302	N/A	N/A	N/A	(6)	None	None		None
S-304	N/A	N/A	N/A	(6)	None	None		None
TX-244 TK/SMP	N/A	N/A	N/A	(6)		None	None	None
TX-302-B	N/A	N/A	N/A	(6)		None	None	None
TX-302-C	N/A	N/A	N/A	(6)	None	None		None
U-301-B	N/A	N/A	N/A	(6)	None	None		None
UX-302-A	N/A	N/A	N/A	(6)	None	None		None
S-141	N/A	N/A	N/A	(6)	O/S	None	None	None
S-142	N/A	N/A	N/A	(6)	O/S	None	None	None
Totals: 149 tanks	19 Hydrogen Watch List Tanks	9 High Heat Tanks (non-Watch List)	N/C: 0		N/C: 0	N/C: 0	N/C: 0	N/C: 0

TABLE D-4. SINGLE-SHELL TANKS MONITORING COMPLIANCE STATUS -149 TANKS
(Sheet 5 of 6)

Footnotes:

1. All SSTs have either manual tape, FIC, or ENRAF surface level measuring devices. Some also have zip cords.

   ENRAF gauges are being installed to replace FICs (or sometimes manual tapes). The ENRAF gauges are being connected to TMACS, but many are currently being read manually from the field. See Table D-6 for list of ENRAF installations.

2. High heat tanks have active exhausters; psychrometrics can be taken in the high heat tanks. Psychrometric readings are taken on an "as needed" basis with the exception of tanks C-105 and C-106. Document OSD-T-151-00013 requires psychrometric readings to be taken in C-105 and C-106 on a monthly frequency when the ventilation system is running. Psychrometric readings were not taken in C-105/106 in May 2000. Discrepancy Report 00-880 was issued August 3, 2000, stating a work package was not prepared due to an oversight during personnel transition. Notification to DOE-RL to discontinue psychrometric data collection in C-105/C-106 was submitted in July 1998; this was not responded to by DOE; therefore the discontinuance of psychrometrics was not incorporated into OSD-T-151-00013. Since the issuance of the Discrepancy Report, an additional request has been made to DOE; as soon as a response is received, the requirement to take psychrometrics will be deleted from the OSD. The Environmental Protection Agency does not require that psychrometrics be taken.

   Psychrometric readings previously taken monthly in SX-farm will now be taken annually.

3. Tank C-106 was removed from the High Heat Load Watch List on December 16, 1999.

4. Temperature readings may be regulated by OSD, POP, or FSAR (FSAR only regulates high heat load tanks). Temperatures cannot be obtained in 13 low heat load tanks (see Table D-2). The OSD does not require readings or repair of out-of-service thermocouples for the low heat load ($\leq$26,000 Btu/h) tanks. However, the POP requires that attempts are to be made semiannually in January and July to obtain readings for these tanks.

   Temperatures in some tanks cannot be taken in the waste because the waste level is lower than the lowest thermocouple in these trees.

   Temperatures for many tanks are monitored continuously by TMACS; see Table D-7, TMACS Monitoring Status.

5. Document OSD-T-151-00031, "Operating Specifications for Tank Farm Leak Detection," REV C-0, January 13, 1999, requires that single-shell tanks with the surface level measurement device contacting liquid, partial liquid, or floating crust surface, will be monitored for leak detection on a daily basis. Tanks with a solid surface will be monitored for leak detection on a weekly basis by taking neutron scan data from a Liquid Observation Well (LOW), if an LOW is present. Tanks with a solid surface but without LOWs will not be monitored for leak detection if the tank has been interim stabilized, until an LOW is installed. The OSD specifies what leak detection methods are to be used for each tank, and the requirements if the readings are not taken on the required frequency or if equipment is out of service.

   This OSD revision does not require drywell surveys to be taken: drywell scans will only be taken under extreme conditions; any scans would have to be subcontracted, as the contractor no longer has vans.

6. Leak detection for the catch tanks is performed by monitoring for the buildup of liquid in the secondary containment (for most tanks with secondary containment) or for decrease in the liquid level for those tanks without secondary containment or secondary containment monitoring.

TABLE D-4. SINGLE-SHELL TANKS MONITORING COMPLIANCE STATUS - 149 TANKS
(Sheet 6 of 6)

Catch tank 240-S-302 is monitored for intrusions only, and is not subject to leak detection monitoring requirements until liquid is present above the intrusion level.

Weight Factor is the surface level measuring device currently used in A-417, A-350, 244-A Tank/Sump, and 244-S Tank/Sump. DCRT CR-003 is inactive and measured in gallons.

7. Document SD-WM-TI-605, REV. 0, dated January 1994, describes the rationale for Liquid Observation Well (LOW) installation priority. This priority is based on tank leak status, tank surface condition, and tank stabilization status. Also included is a listing of tanks with the waste level being below two feet, which have no priority assigned because no effort will be made to install LOWs in the near future. LOW probes are unable to accurately monitor interstitial liquid levels less than two feet high.

Tanks which will not receive LOWs:

A-102	BX-101	C-201	T-106
A-104	BX-103	C-202	T-108
A-105	BX-105	C-203	T-109
AX-102	BX-106	C-204	TX-107
AX-104	BX-108	SX-110	TY-102
B-102	C-108	SX-113	TY-104
B-103	C-109	SX-115	TY-106
B-112	C-111	T-102	U-101
		T-103	U-112

Total - 34 Tanks

8. Tank TX-105 - the LOW was in riser 8; the riser has been removed and the LOW has not been monitored since January 1987. Liquid levels are being taken in riser 9 by ENRAF and recorded in TMACS.

9. Tank AX-101 - LOW readings are taken by gamma sensors.

10. Tanks C-102 and C-103 were removed from the Organics Salts Watch List on August 23, 2000

11. Tank SX-105 - LOW scan not taken for week ending August 28, 2000. LOW is primary leak detection device; ENRAF is backup and monitored daily in TMACS. LOW has failed structurally, and will be replaced. Work Package W2-00-01151/W - approximate deadline date: December 26, 2000.

12. Tank B-110 - LOW scan not taken for week ending October 9, 2000. LOW is primary leak detection device; no stated backup, so device must be repaired in 14 days or an alternative device used to obtain a valid reading before an OSD violation occurs. Discrepancy Report 00-884 (Rev 1) issued October 11, 2000. The LOW is being grouted per 2W-00-01303 so that readings can be obtained. Work Package W2-00-01331/W will replace LOW well at a later date.

TABLE D-5. DOUBLE-SHELL TANKS MONITORING COMPLIANCE STATUS

28 TANKS (Sheet 1 of 2)

October 31, 2000

The following table indicates whether Double-Shell tank monitoring was in compliance with the requirements as specified in the applicable documents as of the last day of the applicable month.

NOTE:

Dome Elevation Surveys are not required for DSTs.

Psychrometrics and in-tank photos/videos are taken "as needed" (2)

LEGEND:	
(Shaded)	= In compliance with all applicable documentation
N/C	= Noncompliance with applicable documentation
FIC/ENRAF M.T.	= Surface level measurement devices
OSD	= OSD-T-151-0007, OSD-T-151-00031
None	= no M.T., FIC or ENRAF installed
O/S	= Out of Service
W.F.	= Weight Factor
N/A	= Not Applicable (not monitored or no monitoring schedule)
Rad.	= Radiation

Tank Number	Watch List	Temperature Readings (3) (OSD)	Surface Level Readings (1) (OSD)			Radiation Readings: Leak Detection Pits (4) (OSD)		Radiation Readings: Annulus (OSD)
			M.T.	FIC	ENRAF	W.F.	Rad. (6)	
AN-101				None			N/A	
AN-102				None			N/A	
AN-103	X			None			N/A	
AN-104	X		O/S	None			N/A	
AN-105	X		O/S	None			N/A	
AN-106				None			N/A	
AN-107				None		O/S	N/A	
AP-101			O/S	None		O/S (7)	N/A	
AP-102				None		O/S (7)	N/A	
AP-103				None		O/S (7)	N/A	
AP-104			O/S	None		O/S (7)	N/A	
AP-105				None		O/S (7)	N/A	
AP-106				None		O/S (7)	N/A	
AP-107				None		O/S (7)	N/A	
AP-108				None		O/S (7)	N/A	
AW-101	X		O/S	None			N/A	
AW-102					(5)		N/A	
AW-103				None			N/A	
AW-104				None			N/A	
AW-105				None			N/A	
AW-106				None			N/A	
AY-101				None		O/S	N/A	O/S
AY-102				None			N/A	O/S (9)
AZ-101				None			N/A	O/S
AZ-102					None		N/A	O/S
SY-101	X		None	None		O/S (10)	N/A	
SY-102			O/S (8)	None			N/A	
SY-103	X		O/S (8)	None		O/S (10)	N/A	
Totals: 28 tanks	6 Watch List Tanks	N/C: 0	N/C: 0	N/C: 0	N/C: 0	N/C: 0	N/C: 0	N/C: 0

TABLE D-5. DOUBLE-SHELL TANKS MONITORING COMPLIANCE STATUS - 28 TANKS
(Sheet 2 of 2)

Footnotes:

1. Some double-shell tanks have both FIC and manual tape which is used when the FIC is out of service. Noncompliance (N/C) will be shown when no readings are obtained. ENRAF gauges are being installed to replace FICs. The ENRAF gauges are being connected to TMACS, but some are currently being read manually.

2. Psychrometric readings are taken on an "as needed" basis. No psychrometric readings are currently being taken in the double-shell tanks.

3. OSD specifies double-shell tank temperature limits, gradients, etc.

4. Applicable OSD and HNF-IP-0842, latest revisions, are used as guidelines for monitoring Leak Detection Pits. See also (6) and (7) below.

5. AW-102 has ENRAF, FIC and M.T. At some point the FIC will be removed.

6. USQ TF-97-0038, dated April 28, 1997, specifies discontinuing the use of leak detection pit radiation monitoring equipment in all double-shell tank farms where the leak detection pits are used as tertiary leak detection. This applies to all double-shell tank farms.

7. Leak Detection Pit weekly readings are being obtained by Instrument Technicians in these tanks:
   AP-103C (for tanks AP-101 - 104)
   AP-105C (for tanks AP-105 - 108)

8. SY-103 - Manual Tape has sporadic readings. ENRAF is primary device.
   SY-102 - Manual Tape has sporadic readings. The plummet fell off the M.T. - a work request was written July 31, 2000. ENRAF is primary device.

9. **AY-102 - off line for AMS-4 Annulus Cam installation**

10. **SY-101 - LDP readings are above normal range. EDL #241-SY-99-2 to repair it.**
    SY-103 - LDP readings are above normal range. EDL #241-SY-95-5 to repair it.

TABLE D-6. ENRAF SURFACE LEVEL GAUGE INSTALLATION AND DATA INPUT METHODS

October 31, 2000

LEGEND

- SACS = Surveillance Analysis Computer System
- TMACS = Tank Monitor and Control System
- Auto = Automatically entered into TMACS and electronically transmitted to SACS
- Manual = Manually entered directly into SACS by surveillance personnel, from Field Data sheets

EAST AREA						WEST AREA					
Tank No.	Installed Date	Input Method	Tank No.	Installed Date	Input Method	Tank No.	Installed Date	Input Method	Tank No.	Installed Date	Input Method
A-101	09/95	Auto	B-201	07/00	Auto	S-101	02/95	Auto	TX-101	11/95	Auto
A-102			B-202	07/00	Auto	S-102	05/95	Auto	TX-102	05/96	Auto
A-103	07/96	Auto	B-203	06/00	Auto	S-103	05/94	Auto	TX-103	12/95	Auto
A-104	05/96	Manual	B-204	06/00	Auto	S-104	06/99	Auto	TX-104	03/96	Auto
A-105			BX-101	04/96	Auto	S-105	07/95	Auto	TX-105	04/96	Auto
A-106	01/96	Auto	BX-102	06/96	Auto	S-106	06/94	Auto	TX-106	04/96	Auto
AN-101	08/96	Auto	BX-103	04/96	Auto	S-107	06/94	Auto	TX-107	04/96	Auto
AN-102	05/00	Auto	BX-104	05/96	Auto	S-108	07/95	Auto	TX-108	04/96	Auto
AN-103	08/95	Auto	BX-105	03/96	Auto	S-109	08/95	Auto	TX-109	11/95	Auto
AN-104	08/95	Auto	BX-106	07/94	Auto	S-110	08/95	Auto	TX-110	05/96	Auto
AN-105	08/95	Auto	BX-107	06/96	Auto	S-111	08/94	Auto	TX-111	05/96	Auto
AN-106	06/00	Auto	BX-108	05/96	Auto	S-112	05/95	Auto	TX-112	05/96	Auto
AN-107	04/00	Auto	BX-109	08/95	Auto	SX-101	04/95	Auto	TX-113	05/96	Auto
AP-101	06/99	Auto	BX-110	06/96	Auto	SX-102	04/95	Auto	TX-114	05/96	Auto
AP-102	08/99	Auto	BX-111	05/96	Auto	SX-103	04/95	Auto	TX-115	05/96	Auto
AP-103	08/99	Auto	BX-112	03/96	Auto	SX-104	05/95	Auto	TX-116	05/96	Auto
AP-104	07/99	Auto	BY-101			SX-105	05/95	Auto	TX-117	06/96	Auto
AP-105	08/99	Auto	BY-102	09/99	Auto	SX-106	08/94	Auto	TX-118	03/96	Auto
AP-106	08/99	Auto	BY-103	12/96	Auto	SX-107	09/99	Auto	TY-101	07/95	Auto
AP-107	08/99	Auto	BY-104			SX-108	09/99	Auto	TY-102	09/95	Auto
AP-108	08/99	Auto	BY-105			SX-109	09/98	Auto	TY-103	09/95	Auto
AW-101	08/95	Auto	BY-106			SX-110	09/99	Auto	TY-104	06/95	Auto
AW-102	05/96	Auto	BY-107			SX-111	09/99	Auto	TY-105	12/95	Auto·
AW-103	05/96	Auto	BY-108			SX-112	09/99	Auto	TY-106	12/95	Auto
AW-104	01/96	Auto	BY-109			SX-113	09/99	Auto	U-101		
AW-105	06/96	Auto	BY-110	02/97	Manual	SX-114	09/99	Auto	U-102	01/96	Manual
AW-106	06/96	Auto	BY-111	02/99	Manual	SX-115	09/99	Manual	U-103	07/94	Auto
AX-101	09/95	Auto	BY-112			SY-101	07/94	Auto	U-104		
AX-102	09/98	Auto	C-101			SY-102	06/94	Auto	U-105	07/94	Auto
AX-103	09/95	Auto	C-102			SY-103	07/94	Auto	U-106	08/94	Auto
AX-104	10/96	Auto	C-103	08/94	Auto	T-101	05/95	Manual	U-107	08/94	Auto
AY-101	03/96	Auto	C-104	04/99	Manual	T-102	06/94	Auto	U-108	05/95	Auto
AY-102	01/98	Auto	C-105	05/96	Manual	T-103	07/95	Manual	U-109	07/94	Auto
AZ-101	08/96	Manual	C-106	02/96	Auto	T-104	12/95	Manual	U-110	01/96	Manual
AZ-102			C-107	04/95	Auto	T-105	07/95	Manual	U-111	01/96	Manual
B-101	07/00	Auto	C-108			T-106	07/95	Manual	U-112		
B-102	02/95	Auto	C-109			T-107	06/94	Auto	U-201		
B-103	07/00	Auto	C-110			T-108	10/95	Manual	U-202		
B-104	06/00	Auto	C-111			T-109	09/94	Manual	U-203	09/98	Manual
B-105	08/00	Auto	C-112	03/96	Manual	T-110	05/95	Auto	U-204	06/98	Manual
B-106	07/00	Auto	C-201			T-111	07/95	Manual			
B-107	06/00	Auto	C-202			T-112	09/95	Manual			
B-108	07/00	Auto	C-203			T-201					
B-109	08/00	Auto	C-204			T-202					
B-110	07/00	Auto				T-203					
B-111	07/00	Auto				T-204					
B-112	03/95	Auto									
Total East Area: 70						Total West Area: 77					

147 ENRAFs installed: 125 automatically entered into TMACS, 22 manually entered into SACS

TABLE D-7. TANK MONITOR AND CONTROL SYSTEM (TMACS)

October 31, 2000

Note: Indicated below are the number of tanks having at least one operating sensor monitored by TMACS.
Some tanks have more than one sensor: multiple sensors of the same type in a tank are not shown in the table (for example: 10 tanks in BY-Farm have at least one operating TC sensor and 3 tanks in BY-Farm have at least one operating RTD sensor).

Acceptance Testing Completed: Sensors Automatically Monitored by TMACS

EAST AREA Tank Farm	Temperatures		ENRAF Level Gauge	Pressure (b)	Hydrogen (c)	Gas Sample Flow
	Thermocouple Tree (TC)	Resistance Thermal Device (RTD)				
A-Farm (6 Tanks)	1		3		1	1
AN-Farm (7 Tanks)	7		7	7	3	3
AP-Farm (8 Tanks)			8			
AW-Farm (6 Tanks)	6		6		1	1
AX-Farm (4 Tanks)	3		4		1	
AY-Farm (2 Tanks)			2			
AZ-Farm (2 Tanks)						
B-Farm (16 Tanks)	1		16			
BX-Farm (12 Tanks)	11		12			
BY-Farm (12 Tanks)	10	3	2			
C-Farm (16 Tanks)	15 (f)	1	3	1		
TOTAL EAST AREA (91 Tanks)	54	4	63	8	6	5
WEST AREA						
S-Farm (12 Tanks)	12		12	1	3	1 (e)
SX-Farm (15 Tanks)	14		14	1	7	5 (e)
SY-Farm (3 Tanks) (a)	3		3	1	2	2
T-Farm (16 Tanks)	14	1	3 (d)		1	(e)
TX-Farm (18 Tanks)	13		18			
TY-Farm (6 Tanks)	6	3	6			
U-Farm (16 Tanks)	15		6	4	6	6
TOTAL WEST AREA (86 Tanks)	77	4	62	7	19	19
TOTALS (177 Tanks)	131	8	125	15	25	24

(a) Tank SY-101 has 2 gas sample flow sensors plus 2 vent flow sensors, and 2 ENRAFs.
(b) Each tank has two sensors (high and low range).
(c) Each tank has two sensors (high and low range).
(d) T-107 - Auto ENRAF O/S, manual readings taken daily
(e) S, SX, and T-Farms - five gas sample flow sensors have been unhooked or removed. Will eventually use SHMS equipment on other tanks but none scheduled yet.
(f) C-105 acromag needs replacing. Manual readings are taken weekly.

APPENDIX E

MISCELLANEOUS UNDERGROUND STORAGE TANKS AND SPECIAL SURVEILLANCE FACILITIES

TABLE E-1. EAST AND WEST AREA MISCELLANEOUS UNDERGROUND STORAGE TANKS AND SPECIAL SURVEILLANCE FACILITIES

ACTIVE - still running transfers through the associated diversion boxes or pipeline encasements

October 31, 2000

FACILITY	LOCATION	PURPOSE (receives waste from:)	(Gallons)	MONITORED BY	REMARKS
EAST AREA					
241-A-302-A	A Farm	A-151 DB	680	SACS/ENRAF/Manually	Pumped to AW-105 7/00
241-ER-311	B Plant	ER-151, ER-152 DB	8320	SACS/ENRAF/Manually	
241-AX-152	AX Farm	AX-152 DB	686	SACS/MT	August 2000 water added to perform integrity test
241-AZ-151	AZ Farm	AZ-702 condensate	2987	SACS/ENRAF/TMACS	Volume changes daily - pumped to AZ-102 as needed
241-AZ-154	AZ Farm		25	SACS/MT	
244-BX-TK/SMP	BX Complex	DCRT - Receives from several farms	17842	SACS/MT	Using Manual Tape for tank/sump, pumped 10/16/99 to 66.0 in.
244-A-TK/SMP	A Complex	DCRT - Receives from several farms	6043	MCS/SACS/WTF	WTF- pumped 3/99 to AP-108
A-350	A Farm	Collects drainage	357	MCS/SACS/WTF	WTF (uncorrected) pumped as needed
AR-204	AY Farm	Tanker trucks from various facilities	525 (*)	DIP TUBE	Alarms on SACS-pumped to AP-108, 7/00
A-417	A Farm		11757	SACS/WTF	WTF (uncorrected) pumped 4/98
CR-003-TK/SUMP	C Farm	DCRT	3127	MT/ZIP CORD	Zip cord in sump O/S 3/11/96, water intrusion, 1/98
WEST AREA					
241-TX-302-C	TX Farm	TX-154 DB	162	SACS/ENRAF/Manually	
241-U-301-B	U Farm	U-151, U-152, U-153, U-252 DB	8063	SACS/ENRAF/Manually	Returned to service 12/30/93
241-UX-302-A	U Plant	UX-154 DB	2836	SACS/ENRAF/Manually	
241-S-304	S Farm	S-151 DB	130	SACS/ENRAF/Manually	Replaced S-302-A, 10/91; ENRAF installed 7/98 Sump not alarming.
244-S-TK/SMP	S Farm	From original tanks to SY-102	12317	SACS/Manually	WTF (uncorrected)
244-TX-TK/SMP	TX Farm	From original tanks to SY-102	5946	SACS/Manually	MT - pumped to SY-102 10/26/00, level now 35.75"
Vent Station Catch Tank		Cross Country Transfer Line	356	SACS/Manually	MT

Total Active Facilities 18

(*) AR-204 was pumped down to 150 gal then valve was left on and 350 gal of water went back into tank.

LEGEND:
- DB - Diversion Box
- DCRT - Double-Contained Receiver Tank
- TK - Tank
- SMP - Sump
- FIC - Food Instrument Corporation measurement device
- MT - Manual Tape
- Zip Cord - surface level measurement device
- WTF - Weight Time Factor - can be recorded as WTF, CWF (corrected), and Uncorrected WTF
- SACS - Surveillance Automated Control System
- MCS - Monitor and Control System
- Manually - Not connected to any automated system
- O/S - Out of Service
- ENRAF - Surface Level Measuring Device

TABLE E-2. EAST AREA INACTIVE MISC. UNDERGROUND STORAGE TANKS AND SPECIAL SURV. FACILITIES

INACTIVE - no longer receiving waste transfers

October 31, 2000

FACILITY	LOCATION	RECEIVED WASTE FROM:	(Gallons)	MONITORED BY	REMARKS
216-BY-201	BY Farm	TBP Waste Line	Unknown	NM	(216-BY)
241-A-302-B	A Farm	A-152 DB	5759	SACS/MT	Isolated 1985, Project B-138 Interim Stabilized 1990, Rain intrusion
241-AX-151	N of PUREX	PUREX	Unknown	NM	Isolated 1985
241-B-301-B	B Farm	B-151, B-152, B-153, B-252 DB	22250	NM	Isolated 1985 (1)
241-B-302-B	B Farm	B-154 DB	4930	NM	Isolated 1985 (1)
241-BX-302-A	BX Farm	BR-152, BX-153, BXR-152, BYR-152 DB	840	NM	Isolated 1985 (1)
241-BX-302-B	BX Farm	BX-154 DB	1040	NM	Isolated 1985 (1)
241-BX-302-C	BX Farm	BX-155 DB	870	NM	Isolated 1985 (1)
241-C-301-C	C Farm	C-151, C-152, C-153, C-252 DB	10470	NM	Isolated 1985 (1)
241-CX-70	Hot Semi-	Transfer lines	Unknown	NM	Isolated, Decommission Project,
241-CX-72	Works	Transfer lines	650	NM	See Dwg H-2-95-501, 2/5/87
241-ER-311A	SW B Plant	ER-151 DB	Unknown	NM	Isolated
244-AR VAULT	A Complex	Between farms & B-Plant	Unknown	NM	Not actively being used. Systems activated for final clean-out.
244-BXR-TK/SMP-001	BX Farm	Transfer lines	7200	NM	Interim Stabilization 1985 (1)
244-BXR-TK/SMP-002	BX Farm	Transfer lines	2180	NM	Interim Stabilization 1985 (1)
244-BXR-TK/SMP-003	BX Farm	Transfer lines	1810	NM	Interim Stabilization 1985 (1)
244-BXR-TK/SMP-011	BX Farm	Transfer lines	7100	NM	Interim Stabilization 1985 (1)
361-B-TANK	B Plant	Drainage from B-Plant	Unknown	NM	Interim Stabilization 1985 (1)

Total East Area inactive facilities 18

LEGEND:
- DB - Diversion Box
- DCRT - Double-Contained Receiver Tank
- MT - Manual Tape
- SACS - Surveillance Automated Control System
- TK - Tank
- SMP - Sump
- R - Usually denotes replacement
- NM - Not Monitored

(1) SOURCE: WASTE STORAGE TANK STATUS & LEAK DETECTION CRITERIA document

TABLE E-3. WEST AREA INACTIVE MISC. UNDERGROUND STORAGE TANKS AND SPECIAL SURV. FACILITIES

INACTIVE - no longer receiving waste transfers

October 31, 2000

FACILITY	LOCATION	RECEIVED WASTE FROM:	(Gallons)	MONITORED BY	REMARKS
216-TY-201	E. of TY Farm	Supernate from T-112	Unknown	NM	Isolated
231-W-151-001	N. of Z Plant	231-Z Floor drains	Unknown	NM	Inactive, last data 1974
231-W-151-002	N. of Z Plant	231-Z Floor drains	Unknown	NM	Inactive, last data 1974
240-S-302	S Farm	240-S-151 DB	8414	SACS/ENRAF	Assumed Leaker EPDA 85-04
241-S-302-A	S Farm	241-S-151 DB	0		Assumed Leaker TF-EFS-90-042
Partially filled with grout 2/91, determined still assumed leaker after leak test. Manual FIC readings are unobtainable due to dry grouted surface. CASS monitoring system retired 2/23/99; intrusion readings discontinued. S-304 replaced S-302-A					
241-S-302-B	S Farm	S Encasements	Unknown	NM	Isolated 1985 (1)
241-SX-302	SX Farm	SX-151 DB, 151 TB	Unknown	NM	Isolated 1987
241-SX-304	SX Farm	SX-152 Transfer Box, SX-151 DB	Unknown	NM	Isolated 1985 (1)
241-T-301	T Farm	DB T-151, -151, -153, -252	Unknown	NM	Isolated 1985 (241-T-301B)
241-TX-302	TX Farm	TX-153 DB	Unknown	NM	Isolated 1985 (1)
241-TX-302-X-B	TX Farm	TX Encasements	Unknown	NM	Isolated 1985 (1)
241-TX-302-B	TX Farm	TX-155 DB	1600	SACS/MT	New MT installed 7/16/93
241-TX-302-B(R)	E. of TX Farm	TX-155 DB	Unknown	NM	Isolated
241-TY-302-A	TY Farm	TX-153 DB	Unknown	NM	Isolated 1985 (1)
241-TY-302-B	TY Farm	TY Encasements	Unknown	NM	Isolated 1985 (1)
241-Z-8	E. of Z Plant	Recuplex waste	Unknown	NM	Isolated, 1974, 1975
242-T-135	T Evaporator	T Evaporator	Unknown	NM	Isolated
242-TA-R1	T Evaporator	Z Plant waste	Unknown	NM	Isolated
243-S-TK-1	N. of S Farm	Pers. Decon. Facility	Unknown	NM	Isolated
244-U-TK/SMP	U Farm	DCRT - Receives from several farms	Unknown	NM	Not yet in use
244-TXR VAULT	TX Farm	Transfer lines	Unknown	NM	Interim Stabilized, MT removed 1984 (1)
244-TXR-TK/SMP-001	TX Farm	Transfer lines	Unknown	NM	Interim Stabilized, MT removed 1984 (1)
244-TXR-TK/SMP-002	TX Farm	Transfer lines	Unknown	NM	Interim Stabilized, MT removed 1984 (1)
244-TXR-TK/SMP-003	TX Farm	Transfer lines	Unknown	NM	Interim Stabilized, MT removed 1984 (1)
270-W	SE of U Plant	Condensate from U-221	Unknown	NM	Isolated 1970
361-T-TANK	T Plant	Drainage from T-Plant	Unknown	NM	Isolated 1985 (1)
361-U-TANK	U Plant	Drainage from U-Plant	Unknown	NM	Interim Stabilzed, MT removed 1984 (1)

Total West Area inactive facilities 27

LEGEND:
- DB - Diversion Box, TB - Transfer Box
- DCRT - Double-Contained Receiver Tank
- TK - Tank
- SMP - Sump
- R - Usually denotes replacement
- FIC - Surface Level Monitoring Device
- MT - Manual Tape
- O/S - Out of Service
- SACS - Surveillance Automated Control System
- NM - Not Monitored
- ENRAF - Surface Level Monitoring Device

(1) SOURCE: WASTE STORAGE TANK STATUS & LEAK DETECTION CRITERIA document

APPENDIX F

LEAK VOLUME ESTIMATES

TABLE F-1. SINGLE-SHELL TANK LEAK VOLUME ESTIMATES (Sheet 1 of 5)

October 31, 2000

Tank Number	Date Declared Confirmed or Assumed Leaker (3)	Volume Gallons (2)	Associated KiloCuries 137 cs (10)	Interim Stabilized Date (11)	Leak Estimate Updated	Leak Estimate Reference
241-A-103	1987	5500 (8)		06/88	1987	(j)
241-A-104	1975	500 to 2500	0.8 to 1.8 (q)	09/78	1983	(a)(q)
241-A-105 (1)	1963	10000 to 277000	85 to 760 (b)	07/79	1991	(b)(c)
241-AX-102	1988	3000 (8)		09/88	1989	(h)
241-AX-104	1977	-- (6)		08/81	1989	(g)
241-B-101	1974	-- (6)		03/81	1989	(g)
241-B-103	1978	-- (6)		02/85	1989	(g)
241-B-105	1978	-- (6)		12/84	1989	(g)
241-B-107	1980	8000 (8)		03/85	1986	(d)(f)
241-B-110	1981	10000 (8)		03/85	1986	(d)
241-B-111	1978	-- (6)		06/85	1989	(g)
241-B-112	1978	2000		05/85	1989	(g)
241-B-201	1980	1200 (8)		08/81	1984	(e)(f)
241-B-203	1983	300 (8)		06/84	1986	(d)
241-B-204	1984	400 (8)		06/84	1989	(g)
241-BX-101	1972	-- (6)		09/78	1989	(g)
241-BX-102	1971	70000	50 (l)	11/78	1986	(d)
241-BX-108	1974	2500	0.5 (l)	07/79	1986	(d)
241-BX-110	1976	-- (6)		08/85	1989	(g)
241-BX-111	1984 (13)	-- (6)		03/95	1993	(g)
241-BY-103	1973	<5000		11/97	1983	(a)
241-BY-105	1984	-- (6)		N/A	1989	(g)
241-BY-106	1984	-- (6)		N/A	1989	(g)
241-BY-107	1984	15100 (8)		07/79	1989	(g)
241-BY-108	1972	<5000		02/85	1983	(a)
241-C-101	1980	20000 (8)(10)		11/83	1986	(d)
241-C-110	1984	2000		05/95	1989	(g)
241-C-111	1968	5500 (8)		03/84	1989	(g)
241-C-201 (4)	1988	550		03/82	1987	(i)
241-C-202 (4)	1988	450		08/81	1987	(i)
241-C-203	1984	400 (8)		03/82	1986	(d)
241-C-204 (4)	1988	350		09/82	1987	(i)
241-S-104	1968	24000 (8)		12/84	1989	(g)
241-SX-104	1988	6000 (8)		04/00	1988	(k)
241-SX-107	1964	<5000		10/79	1983	(a)
241-SX-108 (5)(14)	1962	2400 to 35000	17 to 140 (m)(q)(t)	08/79	1991	(m)(q)(t)
241-SX-109 (5)(14)	1965	<10000	<40 (n)(t)	05/81	1992	(n)(t)
241-SX-110	1976	5500 (8)		08/79	1989	(g)
241-SX-111 (14)	1974	500 to 2000	0.6 to 2.4 (l)(q)(t)	07/79	1986	(d)(q)(t)
241-SX-112 (14)	1969	30000	40 (l)(t)	07/79	1986	(d)(t)
241-SX-113	1962	15000	8 (l)	11/78	1986	(d)
241-SX-114	1972	-- (6)		07/79	1989	(g)
241-SX-115	1965	50000	21 (o)	09/78	1992	(o)
241-T-101	1992	7500 (8)		04/93	1992	(p)
241-T-103	1974	<1000 (8)		11/83	1989	(g)
241-T-106	1973	115000 (8)	40 (l)	08/81	1986	(d)
241-T-107	1984	-- (6)		05/96	1989	(g)
241-T-108	1974	<1000 (8)		11/78	1980	(f)
241-T-109	1974	<1000 (8)		12/84	1989	(g)
241-T-111	1979, 1994 (12)	<1000 (8)		02/95	1994	(f)(r)
241-TX-105	1977	-- (6)		04/83	1989	(g)
241-TX-107 (5)	1984	2500		10/79	1986	(d)
241-TX-110	1977	-- (6)		04/83	1989	(g)
241-TX-113	1974	-- (6)		04/83	1989	(g)
241-TX-114	1974	-- (6)		04/83	1989	(g)
241-TX-115	1977	-- (6)		09/83	1989	(g)
241-TX-116	1977	-- (6)		04/83	1989	(g)
241-TX-117	1977	-- (6)		03/83	1989	(g)
241-TY-101	1973	<1000 (8)		04/83	1980	(f)
241-TY-103	1973	3000	0.7 (l)	02/83	1986	(d)
241-TY-104	1981	1400 (8)		11/83	1986	(d)
241-TY-105	1960	35000	4 (l)	02/83	1986	(d)
241-TY-106	1959	20000	2 (l)	11/78	1986	(d)
241-U-101	1959	30000	20 (l)	09/79	1986	(d)
241-U-104	1961	55000	0.09 (l)	10/78	1986	(d)
241-U-110	1975	5000 to 8100 (8)	0.05 (q)	12/84	1986	(d)(q)
241-U-112	1980	8500 (8)		09/79	1986	(d)
67 Tanks		<750,000 - 1,050,000 (7)				

N/A = not applicable (not yet interim stabilized)

TABLE F-1. SINGLE-SHELL LEAK VOLUME ESTIMATES
(Sheet 2 of 6)

Footnotes:

(1) Current estimates [see reference(b)] are that 610 Kgallons of cooling water was added to Tank 241-A-105 from November 1970 to December 1978 to aid in evaporative cooling. In accordance with Dangerous Waste Regulations [Washington Administrative Code 173-303-070 (2)(a)(ii), as amended, Washington State Department of Ecology, 1990, Olympia, Washington], any of this cooling water that has been added and subsequently leaked from the tank must be classified as a waste and should be included in the total leak volume. In August 1991, the leak volume estimate for this tank was updated in accordance with the WAC regulations. Previous estimates excluded the cooling water leaks from the total leak volume estimates because the waste content (concentration) in the cooling water which leaked should be much less than the original liquid waste in the tank (the sludge is relatively insoluble). The total leak volume estimate in this report (10 Kgallons to 277 Kgallons) is based on the following (see References):

1. Reference (b) contains an estimate of 5 Kgallons to 15 Kgallons for the initial leak prior to August 1968.

2. Reference (b) contains an estimate of 5 Kgallons to 30 Kgallons for the leak while the tank was being sluiced from August 1968 to November 1970.

3. Reference (b) contains an estimate of 610 Kgallons of cooling water added to the tank from November 1970 to December 1978 but it was estimated that the leakage was small during this period. This reference contains the statement "Sufficient heat was generated in the tank to evaporate most, and perhaps nearly all, of this water." This results in a low estimate of zero gallons leakage from November 1970 to December 1978.

4. Reference (c) contains an estimate the 378 to 410 Kgallons evaporated out of the tank from November 1970 to December 1978. Subtracting the minimum evaporation estimate from the cooling water added estimate provides a range from 0 to 232 Kgallons of cooling water leakage from November 1970 to December 1978.

	Low Estimate	High Estimate
Prior to August 1968	5,000	15,000
August 1968 to November 1970	5,000	30,000
November 1970 to December 1978	0	232,000
Totals	10,000	277,000

(2) These leak volume estimates do not include (with some exceptions), such things as: (a) cooling/raw water leaks, (b) intrusions (rain infiltration) and subsequent leaks, (c) leaks inside the tank farm but not through the tank liner (surface leaks, pipeline leaks, leaks at the joint for the overflow or fill lines, etc.), and (d) leaks from catch tanks, diversion boxes, encasements, etc.

(3) In many cases, a leak was suspected long before it was identified or confirmed. For example, reference (d) shows that Tank 241-U-104 was suspected of leaking in 1956. The leak was "confirmed" in 1961. This report lists the "assumed leaker" date of 1961. Using present standards, Tank 241-U-104 would have been declared an assumed leaker in 1956. In 1984, the criteria designations of "suspected leaker," "questionable integrity," "confirmed leaker," "declared leaker," "borderline" and "dormant," were merged into one category now reported as "assumed leaker." See reference (f) for explanation of when, how long, and how fast some of the tanks leaked. It is highly likely that there have been undetected leaks from single-shell tanks because of the nature of their design and instrumentation.

TABLE F-1. SINGLE-SHELL TANK LEAK VOLUME ESTIMATES
(Sheet 3 of 6)

(4) The leak volume estimate date for these tanks is before the "declared leaker" date because the tank was in a "suspected leaker" or "questionable integrity" status; however, a leak volume had been estimated prior to the tank being reclassified.

(5) The increasing radiation levels in drywells and laterals associated with these three tanks could be indicating continuing leak or movement of existing radionuclides in the soil. There is no conclusive way to confirm these observations.

(6) Methods were used to estimate the leak volumes from these 19 tanks based on the assumption that their cumulative leakage is approximately the same as for 18 of the 24 tanks identified in footnote (9). For more details see reference (g). The total leak volume estimate for these tanks is 150 Kgallons (rounded to the nearest Kgallons), for an average of approximately 8 Kgallons for each of 19 tanks.

(7) The total has been rounded to the nearest 50 Kgallons. Upper bound values were used in many cases in developing these estimates. It is likely that some of these tanks have not actually leaked.

(8) Leak volume estimate is based solely on observed liquid level decreases in these tanks. This is considered to be the most accurate method for estimating leak volumes.

(9) The curie content shown is as listed in the reference document and is not decayed to a consistent date: therefore, a cumulative total is inappropriate.

(10) Tank 241-C-101 experienced a liquid level decrease in the late 1960s and was taken out of service and pumped to a "minimum heel" in December 1969. In 1970, the tank was classified as a "questionable integrity" tank. Liquid level data show decreases in level throughout the 1970s and the tank was saltwell pumped during the 1970s, ending in April 1979. The tank was reclassified as a "confirmed leaker" in January 1980. See references (q) and (r); refer to reference (s) for information on the potential for there to have been leaks from other C-farm tanks (specifically, C-102, C-103, and C-109).

(11) These dates indicate when the tanks were declared to be interim stabilized. In some cases, the official interim stabilization documents were issued at a later date. Also, in some cases, the field work associated with interim stabilization was completed at an earlier date.

(12) Tank T-111 was declared an assumed re-leaker on February 28, 1994, due to a decreasing trend in surface level measurement. This tank was pumped, and interim stabilization completed on February 22, 1995.

(13) Tank BX-111 was declared an assumed re-leaker in April 1993. Preparations for pumping were delayed, following an administrative hold placed on all tank farm operations in August 1993. Pumping resumed and the tank was declared interim stabilized on March 15, 1995.

(14) The leak volume and curie release estimates on SX-108, SX-109, SX-111, and SX-112 have been re-evaluated using a Historical Leak Model [see reference (t)]. In general, the model estimates are much higher than the values listed in the table, both for volume and curies released. The values listed in the table do not reflect this revised estimate because, "In particular, it is worth emphasizing that this report was never meant to be a definitive update for the leak baseline at the Hanford Site. It was rather meant to be an attempt to view the issue of leak inventories with a new and different methodology." (This quote is from the first page of the referenced report).

(15) In July 1998, the Washington State Department of Ecology (Ecology) directed the U. S. Department of Energy (DOE) to develop corrective action plans for eight single-shell tank farms (B/BX/BY/S/SX/T/TX/TY) where groundwater contamination likely originated from tank farm operations. A Tri-Party Agreement milestone (M-45 series) was developed that established a formalized approach for evaluating impacts on groundwater quality of losses of tank wastes to the

TABLE F-1. SINGLE-SHELL TANK LEAK VOLUME ESTIMATES
(Sheet 4 of 6)

vadose zone underlying these tank farms. Planning documents have been completed for the S, SX, B, BX, and BY tank farms and will be completed shortly for the T, TX, and TY farms. The phase 1 field investigation is near completion in the S and SX tank farms and has begun in the B, BX, and BY farms. Field work is anticipated in FY-02 for the T, TX, and TY tank farms. The remaining four single-shell tank farms are expected to be included in corrective action plans in the near future.

All of the information included in this appendix is currently under review and significant revisions are anticipated. Recently, major tank farm vadose zone investigation efforts (such as the baseline spectral gamma-ray logging of all drywells in all single-shell tank farms, as well as drilling and sampling in the SX tank farm) were completed. This appendix will be revised as a better understanding of past tank leak events is developed.

TABLE F-1. SINGLE-SHELL TANK LEAK VOLUME ESTIMATES
(Sheet 5 of 6)

References:

(a) Murthy, K.S., et al, June 1983, *Assessment of Single-Shell Tank Residual Liquid Issues at Hanford Site, Washington*, PNL-4688, Pacific Northwest Laboratory, Richland, Washington.

(b) WHC, 1991a, *Tank 241-A-105 Leak Assessment*, WHC-MR-0264, Westinghouse Hanford Company, Richland, Washington.

(c) WHC, 1991b, *Tank 241-A-105 Evaporation Estimate 1970 Through 1978*, WHC-EP-0410, Westinghouse Hanford Company, Richland, Washington.

(d) Smith, D. A., January 1986, *Single-Shell Tank Isolation Safety Analysis Report*, SD-WM-SAR-006, Rev. 1, Westinghouse Hanford Company, Richland, Washington.

(e) McCann, D. C., and T. S. Vail, September 1984, *Waste Status Summary*, RHO-RE-SR-14, Rockwell Hanford Operations, Richland, Washington.

(f) Catlin, R. J., March 1980, *Assessment of the Surveillance Program of the High-Level Waste Storage Tanks at Hanford*, Hanford Engineering Development Laboratory, Richland, Washington.

(g) Baumhardt, R. J., May 15, 1989, Letter to R. E. Gerton, U.S. Department of Energy-Richland Operations Office, *Single-Shell Tank Leak Volumes*, 8901832B R1, Westinghouse Hanford Company, Richland, Washington.

(h) WHC, 1990a, Occurrence Report, *Surface Level Measurement Decrease in Single-Shell Tank 241-AX-102*, WHC-UO-89-023-TF-05, Westinghouse Hanford Company, Richland, Washington.

(i) Groth, D. R., July 1, 1987, Internal Memorandum to R. J. Baumhardt, *Liquid Level Losses in Tanks 241-C-201, -202 and -204*, 65950-87-517, Westinghouse Hanford Company, Richland, Washington.

(j) Groth, D. R. and G. C. Owens, May 15, 1987, Internal Memorandum to J. H. Roecker, *Tank 103-A Integrity Evaluation*, Westinghouse Hanford Company, Richland, Washington.

(k) Dunford, G. L., July 8, 1988, Internal Memorandum to R. K. Welty, *Engineering Investigation: Interstitial Liquid Level Decrease in Tank 241-SX-104*, 13331-88-416, Westinghouse Hanford Company, Richland, Washington.

(l) ERDA, 1975, *Final Environmental Statement Waste Management Operations, Hanford Reservation, Richland, Washington*, ERDA-1538, 2 vols., U.S. Energy Research and Development Administration, Washington, D.C.

(m) WHC, 1992a, *Tank 241-SX-108 Leak Assessment*, WHC-MR-0300, Westinghouse Hanford Company, Richland, Washington.

(n) WHC, 1992b, *Tank 241-SX-109 Leak Assessment*, WHC-MR-0301, Westinghouse Hanford Company, Richland, Washington.

(o) WHC, 1992c, *Tank 241-SX-115 Leak Assessment*, WHC-MR-0302, Westinghouse Hanford Company, Richland, Washington.

TABLE F-1. SINGLE-SHELL TANK LEAK VOLUME ESTIMATES
(Sheet 6 of 6)

(p) WHC, 1992d, Occurrence Report, *Apparent Decrease in Liquid Level in Single Shell Underground Storage Tank 241-T-101, Leak Suspected; Investigation Continuing*, RL-WHC-TANKFARM-1992-0073, Westinghouse Hanford Company, Richland, Washington.

(q) WHC,1990b, *A History of the 200 Area Tank Farms*, WHC-MR-0132, Westinghouse Hanford Company, Richland, Washington.

(r) WHC, 1993a, *Assessment of Unsaturated Zone Radionuclide Contamination Around Single-Shell Tanks 241-C-105 and 241-C-106, WHC-SD-EN-TI-185*, REV OA, Westinghouse Hanford Company, Richland, Washington.

(s) WHC, 1994, Occurrence Report, *Apparent Liquid Level Decrease in Single Shell Underground Storage Tank 241-T-111; Declared an Assumed Re-Leaker*, RL-WHC-TANKFARM-1994-0009, Westinghouse Hanford Company, Richland, Washington.

(t) HNF, 1998, Agnew, S. F. and R. A. Corbin, August 1998, *Analysis of SX Farm Leak Histories - Historical Leak Model*, (HLM), HNF-3233, Rev. 0, Los Alamos National Laboratory, Los Alamos, New Mexico

APPENDIX G

SINGLE-SHELL TANKS INTERIM STABILIZATION, AND CONTROLLED, CLEAN AND STABLE (CCS) STATUS

TABLE G-1. SINGLE-SHELL TANKS INTERIM STABILIZATION STATUS (Sheet 1 of 3)

October 31, 2000

Tank Number	Tank Integrity	Interim Stabil. Date (1)	Stabil. Method
A-101	SOUND	N/A	
A-102	SOUND	08/89	SN
A-103	ASMD LKR	06/88	AR
A-104	ASMD LKR	09/78	AR
A-105	ASMD LKR	07/79	AR
A-106	SOUND	08/82	AR
AX-101	SOUND	N/A	
AX-102	ASMD LKR	09/88	SN
AX-103	SOUND	08/87	AR
AX-104	ASMD LKR	08/81	AR
B-101	ASMD IKR	03/81	SN
B-102	SOUND	08/85	SN
B-103	ASMD IKR	02/85	SN
B-104	SOUND	06/85	SN
B-105	ASMD IKR	12/84	AR
B-106	SOUND	03/85	SN
B-107	ASMD LKR	03/85	SN
B-108	SOUND	05/85	SN
B-109	SOUND	04/85	SN
B-110	ASMD LKR	12/84	AR
B-111	ASMD LKR	06/85	SN
B-112	ASMD LKR	05/85	SN
B-201	ASMD LKR	08/81	AR (3)
B-202	SOUND	05/85	AR(2)
B-203	ASMD LKR	06/84	AR
B-204	ASMD LKR	06/84	AR
BX-101	ASMD LKR	09/78	AR
BX-102	ASMD LKR	11/78	AR
BX-103	SOUND	11/83	AR(2)
BX-104	SOUND	09/89	SN
BX-105	SOUND	03/81	SN
BX-106	SOUND	07/95	SN
BX-107	SOUND	09/90	JET
BX-108	ASMD LKR	07/79	SN
BX-109	SOUND	09/90	JET
BX-110	ASMD LKR	08/85	SN
BX-111	ASMD LKR	03/95	JET
BX-112	SOUND	09/90	JET
BY-101	SOUND	05/84	JET
BY-102	SOUND	04/95	JET
BY-103	ASMD LKR	11/97	JET
BY-104	SOUND	01/85	JET
BY-105	ASMD LKR	N/A	
BY-106	ASMD LKR	N/A	
BY-107	ASMD LKR	07/79	JET
BY-108	ASMD LKR	02/85	JET
BY-109	SOUND	07/97	JET
BY-110	SOUND	01/85	JET
BY-111	SOUND	01/85	JET
BY-112	SOUND	06/84	JET

Tank Number	Tank Integrity	Interim Stabil. Date (1)	Stabil. Method
C-101	ASMD LKR	11/83	AR
C-102	SOUND	09/95	JET
C-103	SOUND	N/A	
C-104	SOUND	09/89	SN
C-105	SOUND	10/95	AR
C-106	SOUND	N/A	
C-107	SOUND	09/95	JET
C-108	SOUND	03/84	AR
C-109	SOUND	11/83	AR
C-110	ASMD LKR	05/95	JET
C-111	ASMD LKR	03/84	SN
C-112	SOUND	09/90	AR
C-201	ASMD LKR	03/82	AR
C-202	ASMD LKR	08/81	AR
C-203	ASMD LKR	03/82	AR
C-204	ASMD LKR	09/82	AR
S-101	SOUND	N/A	
S-102	SOUND	N/A	
S-103	SOUND	04/00	JET (6)
S-104	ASMD LKR	12/84	AR
S-105	SOUND	09/88	JET
S-106	SOUND	N/A	
S-107	SOUND	N/A	
S-108	SOUND	12/96	JET
S-109	SOUND	N/A	
S-110	SOUND	01/97	JET
S-111	SOUND	N/A	
S-112	SOUND	N/A	
SX-101	SOUND	N/A	
SX-102	SOUND	N/A	
SX-103	SOUND	N/A	
SX-104	ASMD LKR	04/00	JET (7)
SX-105	SOUND	N/A	
SX-106	SOUND	05/00	JET (8)
SX-107	ASMD LKR	10/79	AR
SX-108	ASMD LKR	08/79	AR
SX-109	ASMD LKR	05/81	AR
SX-110	ASMD LKR	08/79	AR
SX-111	ASMD LKR	07/79	SN
SX-112	ASMD LKR	07/79	AR
SX-113	ASMD LKR	11/78	AR
SX-114	ASMD LKR	07/79	AR
SX-115	ASMD LKR	09/78	AR
T-101	ASMD LKR	04/93	SN
T-102	SOUND	03/81	AR(2)(3)
T-103	ASMD LKR	11/83	AR
T-104	SOUND	11/99 (4)	JET
T-105	SOUND	06/87	AR
T-106	ASMD LKR	08/81	AR
T-107	ASMD LKR	05/96	JET

Tank Number	Tank Integrity	Interim Stabil. Date (1)	Stabil. Method
T-108	ASMD LKR	11/78	AR
T-109	ASMD LKR	12/84	AR
T-110	SOUND	01/00 (5)	JET
T-111	ASMD LKR	02/95	JET
T-112	SOUND	03/81	AR(2)(3)
T-201	SOUND	04/81	AR (3)
T-202	SOUND	08/81	AR
T-203	SOUND	04/81	AR
T-204	SOUND	08/81	AR
TX-101	SOUND	02/84	AR
TX-102	SOUND	04/83	JET
TX-103	SOUND	08/83	JET
TX-104	SOUND	09/79	SN
TX-105	ASMD LKR	04/83	JET
TX-106	SOUND	06/83	JET
TX-107	ASMD LKR	10/79	AR
TX-108	SOUND	03/83	JET
TX-109	SOUND	04/83	JET
TX-110	ASMD LKR	04/83	JET
TX-111	SOUND	04/83	JET
TX-112	SOUND	04/83	JET
TX-113	ASMD LKR	04/83	JET
TX-114	ASMD LKR	04/83	JET
TX-115	ASMD LKR	09/83	JET
TX-116	ASMD LKR	04/83	JET
TX-117	ASMD LKR	03/83	JET
TX-118	SOUND	04/83	JET
TY-101	ASMD LKR	04/83	JET
TY-102	SOUND	09/79	AR
TY-103	ASMD LKR	02/83	JET
TY-104	ASMD LKR	11/83	AR
TY-105	ASMD LKR	02/83	JET
TY-106	ASMD LKR	11/78	AR
U-101	ASMD LKR	09/79	AR
U-102	SOUND	N/A	
U-103	SOUND	09/00	JET (9)
U-104	ASMD LKR	10/78	AR
U-105	SOUND	N/A	
U-106	SOUND	N/A	
U-107	SOUND	N/A	
U-108	SOUND	N/A	
U-109	SOUND	N/A	
U-110	ASMD LKR	12/84	AR
U-111	SOUND	N/A	
U-112	ASMD LKR	09/79	AR
U-201	SOUND	08/79	AR
U-202	SOUND	08/79	SN
U-203	SOUND	08/79	AR
U-204	SOUND	08/79	SN

LEGEND:

- AR = Administratively interim stabilized
- JET = Saltwell jet pumped to remove drainable interstitial liquid
- SN = Supernate pumped (Non-Jet pumped)
- N/A = Not yet interim stabilized
- ASMD LKR = Assumed Leaker

Interim Stabilized Tanks	125
Not Yet Interim Stabilized	24
Total Single-Shell Tanks	149

TABLE G-1. SINGLE-SHELL TANKS INTERIM STABILIZATION STATUS (sheet 2 of 2)

Footnotes:

(1) These dates indicate when the tanks were actually interim stabilized. In some cases, the official interim stabilization documents were issued at a later date.

(2) Although tanks, BX-103, T-102 and T-112 met the interim stabilization administrative procedure at the time they were stabilized, they no longer meet the recently updated administrative procedure. The tanks were re-evaluated in 1996 and memo 9654456, J. H. Wicks to Dr. J. K. McClusky, DOE-RL, dated September 1996, was issued which recommended that no further pumping be performed on these tanks, based on an economic evaluation.

Document RPP-5556, Rev. 0, "Updated Drainable Interstitial Liquid Volume Estimates for 119 Single-Shell Tanks Declared Stabilized," J. G. Field, February 7, 2000, states that five tanks no longer meet the stabilization criteria (BX-103, T-102, and T-112 exceed the supernate criteria, and BY-103 and C-102 exceed the DIL criteria).

An intrusion investigation was completed on tank B-202 in 1996 because of a detected increase in surface level. As a result of this investigation, it was determined that this tank no longer meets the recently updated administrative procedure for 200 series tanks.

(3) Original Interim Stabilization data are missing on four tanks: B-201, T-102, T-112, and T-201.

(4) Tank 241-T-104 was Interim Stabilized on November 19, 1999. In-tank video taken October 7, 1999, shows the surface is clearly sludge-type waste with no saltcake present. No visible water on surface. Waste surface appears level across tank with numerous cracks. There is a minimal collapsed area around the saltwell screen, with no visible bottom.

(5) Tank 241-T-110 was Interim Stabilized on January 5, 2000, due to major equipment failure. An in-tank video taken October 7, 1999 (pumping was discontinued on August 12, 1999), showed the surface of this tank as smooth, brown-tinted sludge with visible cracks.

(6) Tank 241-S-103 was declared Interim Stabilized April 18, 2000. The surface is a rough, black and brown-colored waste with yellow patches of saltcake visible throughout. The surface appears to be damp but not saturated, and shows irregular cracking typically seen with surfaces beginning to dry out. A pool of supernatant liquid (10 feet in diameter, 5 feet deep, 1.0 Kgallons) is visible from video observations.

(7) Tank 241-SX-104 was declared Interim Stabilized April 26, 2000, due to major equipment failure. The surface is a rough, yellowish gray saltcake waste with an irregular surface of visible cracks and shelves that were created as the surface dried out. The waste surface appears to be dry and shows no standing water within the tank.

(8) Tank 241-SX-106 was declared Interim Stabilized May 5, 2000. The surface is a smooth, white-colored saltcake waste. The surface level slopes slightly from the tank sidewall down to a large depression in the center of the tank. A second depression surrounds both saltwell screens and an abandoned LOW. The waste surfaces appear dry and show no standing water within the tank.

(9) Tank 241-U-103 was declared Interim Stabilized September 11, 2000. The surface is a brown colored waste with irregular patches of white salt crystal. Approximately 30% of the waste surface is covered by the salt formations. The surface level slopes slightly from the tank sidewall down to the first of two depressions in the center of the tank. The waste surface appears dry and shows signs of drying and cracking due to saltwell pumping. LOW readings indicate an average adjusted ILL of 60.2 inches. There is a small pool of supernatant liquid estimated to be 500 gallons.

TABLE G-2. SINGLE-SHELL TANK INTERIM STABILIZATION MILESTONES

October 31, 2000
(sheet 1 of 2)

New single-shell tank interim stabilization milestones were negotiated in 1999 and are identified in the "Consent Decree." The Consent Decree was approved on August 16, 1999.

CONSENT DECREE
Attachments A-1 and A-2

Following is the schedule for pumping liquid waste from the remaining twenty-nine (29) single-shell tanks. This schedule is enforceable pursuant to the terms of the Decree except for the "Project Pumping Completion Dates," which are estimates only and not enforceable. (Note: Schedule does not include C-106)

Tank Designation	Projected Pumping Start Date	Actual Pumping Start Date	Projected Pumping Completion Date	Interim Stabilization Date
1. T-104	Already initiated	March 24, 1996	May 30, 1999	November 19, 1999
2. T-110	Already initiated	May 12, 1997	May 30, 1999	January 5, 2000
3. SX-104	Already initiated	September 26, 1997	December 30, 2000	April 26, 2000
4. SX-106	Already initiated	October 6, 1998	December 30, 2000	May 5, 2000
5. S-102	July 31, 1999	March 18, 1999	March 30, 2001	
6. S-106	July 31, 1999	April 16, 1999	March 30, 2001	
7. S-103	July 31, 1999	June 4, 1999	March 30, 2001	April 18, 2000
8. U-103*	June 15, 2000	September 26, 1999	April 15, 2002	September 11, 2000
9. U-105*	June 15, 2000	December 10, 1999	April 15, 2002	
10. U-102*	June 15, 2000	January 20, 2000	April 15, 2002	
11. U-109*	June 15, 2000	March 11, 2000	April 15, 2002	
12. A-101	October 30, 2000	May 6, 2000	September 30, 2003	
13. AX-101	October 30, 2000	July 29, 2000	September 30, 2003	
14. SX-105	March 15, 2001	August 8, 2000	February 28, 2003	
15. SX-103	March 15, 2001	**October 26, 2000**	February 28, 2003	
16. SX-101	March 15, 2001		February 28, 2003	
17. U-106*	March 15, 2001	August 24, 2000	February 28, 2003	
18. BY-106	July 15, 2001		June 30, 2003	
19. BY-105	July 15, 2001		June 30, 2003	
20. U-108	December 30, 2001		August 30, 2003	
21. U-107	December 30, 2001		August 30, 2003	
22. S-111	December 30, 2001		August 30, 2003	
23. SX-102	December 30, 2001		August 30, 2003	
24. U-111	November 30, 2002		September 30, 2003	
25. S-109	November 30, 2002	September 23, 2000	September 30, 2003	
26. S-112	November 30, 2002		September 30, 2003	
27. S-101	November 30, 2002		September 30, 2003	
28. S-107	November 30, 2002		September 30, 2003	
29. C-103	No later than December 30, 2000, DOE will determine whether the organic layer and pumpable liquids will be pumped from this tank together or separately, and will establish a deadline for initiating pumping of this tank. The parties will incorporate the initiation deadline into this schedule as provided in Section VI of the Decree. CHG issued a contract to a subcontractor for scope and cost estimate. RPP-6310, "Removal of Separable Organic from C-103 Scoping Study," was issued in May 2000. Additionally, other alternatives are being studied.			

* Tanks containing organic complexants.

TABLE G-2. SINGLE-SHELL TANK INTERIM STABILIZATION MILESTONES
(sheet 2 of 2)

Completion of Interim Stabilization. DOE will complete interim stabilization of all 29 single-shell tanks listed above by September 30, 2004.

Percentage of Pumpable Liquid Remaining to be Removed:

93% of Total Liquid	9/30/1999 (1)
38% of Organic Complexed Pumpable Liquids	9/30/2000 (2)
5% of Organic Complexed Pumpable Liquids	9/30/2001
18% of Total Liquid	9/30/2002
2% of Total Liquid	9/30/2003

The "percentage of pumpable liquid remaining to be removed" is calculated by dividing the volume of pumpable liquid remaining to be removed from tanks not yet interim stabilized by the sum of the total amount of liquid that has been pumped and the pumpable liquid that remains to be pumped from all tanks.

(1) The Pumpable Liquid Remaining was reduced to 88%, by 9/30/99, exceeding this milestone. Reference LMHC-9957926 R1, D. I. Allen, LHMC RPP to D. C. Bryson, DOE-OPP, dated October 26, 1999

(2) The Complexed Pumpable Liquid Remaining was reduced to 38%, by 9/15/00. Reference CHG-0004752, R. F. Wood, CHG, to J. J. Short, DOE-RPP, dated September 13, 2000.

TABLE G-3. SINGLE-SHELL TANKS STABILIZATION STATUS SUMMARY

October 31, 2000

Partial Interim Isolated (PI)

EAST AREA	WEST AREA
A-101	S-101
A-102	S-102
AX-101	S-103
BY-102	S-106
BY-103	S-107
BY-105	S-108
BY-106	S-109
BY-109	S-110
C-103	S-111
C-105	S-112
C-106	SX-101
East Area 11	SX-102
	SX-103
	SX-104
	SX-105
	SX-106
	T-101
	T-104
	T-107
	T-110
	T-111
	U-102
	U-103
	U-105
	U-106
	U-107
	U-108
	U-109
	U-110
	U-111
	West Area 29
	Total 40

Intrusion Prevention Completed (IP)

EAST AREA	WEST AREA
A-103	S-104
A-104	S-105
A-105	SX-107
A-106	SX-108
AX-102	SX-109
AX-103	SX-110
AX-104	SX-111
B-FARM - 16 tanks	SX-112
BX-FARM - 12 tanks	SX-113
BY-101	SX-114
BY-104	SX-115
BY-107	T-102
BY-108	T-103
BY-110	T-105
BY-111	T-106
BY-112	T-108
C-101	T-109
C-102	T-112
C-104	T-201
C-107	T-202
C-108	T-203
C-109	T-204
C-110	TX-FARM - 18 tanks
C-111	TY-FARM - 6 tanks
C-112	U-101
C-201	U-104
C-202	U-112
C-203	U-102
C-204	U-202
East Area 55	U-203
	U-204
	West Area 53
	Total 108

Interim Stabilized (IS)

EAST AREA	WEST AREA
A-102	S-103
A-103	S-104
A-104	S-105
A-105	S-106
A-106	S-110
AX-102	SX-104
AX-103	SX-106
AX-104	SX-107
B-FARM - 16 tanks	SX-108
BX-FARM - 12 tanks	SX-109
BY-101	SX-110
BY-102	SX-111
BY-103	SX-112
BY-104	SX-113
BY-107	SX-114
BY-108	SX-115
BY-109	T-Farm - 16 tanks
BY-110	TX-FARM - 18 tanks
BY-111	TY-FARM - 6 tanks
BY-112	U-101
C-101	U-103
C-102	U-104
C-104	U-110
C-105	U-112
C-107	U-201
C-108	U-202
C-109	U-203
C-110	U-204
C-111	West Area 65
C-112	Total 125
C-201	
C-202	
C-203	
C-204	
East Area 60	

Controlled, Clean, and Stable (CCS)

EAST AREA	WEST AREA
BX-FARM - 12 Tanks	TX-FARM - 18 tanks
	TY FARM - 6 tanks
East Area 12	West Area 24
	Total 36

Note: CCS activities have been deferred until funding is available.

APPENDIX H

TANKS AND EQUIPMENT CODE AND STATUS DEFINITIONS

TABLE H - 1. TANK AND EQUIPMENT CODE/STATUS DEFINITIONS

October 31, 2000

1. TANK STATUS CODES

WASTE TYPE (also see definitions, section 2 below)

AW	Aging Waste (Neutralized Current Acid Waste [NCAW])
CC	Complexant Concentrate Waste
CP	Concentrated Phosphate Waste
DC	Dilute Complexed Waste
DN	Dilute Non-Complexed Waste
DSS	Double-Shell Slurry
DSSF	Double-Shell Slurry Feed
NCPLX	Non-Complexed Waste
PD	Plutonium-Uranium Extraction (PUREX) Neutralized Cladding Removal Waste (NCRW), transuranic waste (TRU)

TANK USE (DOUBLE-SHELL TANKS ONLY)

CWHT	Concentrated Waste Holding Tank
DRCVR	Dilute Receiver Tank
EVFD	Evaporate Feed Tank
SRCVR	Slurry Receiver Tank

2. DEFINITIONS

WASTE TANKS - GENERAL

Waste Tank Safety Issue

A potentially unsafe condition in the handling of waste material in underground storage tanks that requires corrective action to reduce or eliminate the unsafe condition.

Watch List Tank

An underground storage tank containing waste that requires special safety precautions because it may have a serious potential for release of high level radioactive waste because of uncontrolled increases in temperature or pressure. Special restrictions have been placed on these tanks by "Safety Measures for Waste Tanks at Hanford Nuclear Reservation," Section 3137 of the *National Defense Authorization Act for Fiscal Year 1991*, November 5, 1990, Public Law 101-510, (also known as the Wyden Amendment).

Characterization

Characterization is understanding the Hanford tank waste chemical, physical, and radiological properties to the extent necessary to insure safe storage and interim operation, and ultimate disposition of the waste.

WASTE TYPES

Aging Waste (AW)

High level, first cycle solvent extraction waste from the PUREX plant (NCAW)

Concentrated Complexant (CC)

Concentrated product from the evaporation of dilute complexed waste.

Concentrated Phosphate Waste (CP)

Waste originating from the decontamination of the N Reactor in the 100 N Area. Concentration of this waste produces concentrated phosphate waste.

Dilute Complexed Waste (DC)

Characterized by a high content of organic carbon including organic complexants: ethylenediaminetetra-acetic acid (EDTA), citric acid, and hydroxyethyl-ethylenediaminetriacetic acid (HEDTA), being the major complexants used. Main sources of DC waste in the DST system are saltwell liquid inventory (from SSTs).

Dilute Non-Complexed Waste (DN)

Low activity liquid waste originating from T and S Plants, the 300 and 400 Areas, PUREX facility (decladding supernatant and miscellaneous wastes), 100 N Area (sulfate waste), B Plant, saltwells, and PFP (supernate).

Double-Shell Slurry (DSS)

Waste that exceeds the sodium aluminate saturation boundary in the evaporator without exceeding receiver tank composition limits. For reporting purposes, DSS is considered a solid.

Double-Shell Slurry Feed (DSSF)

Waste concentrated just before reaching the sodium aluminate saturation boundary in the evaporator without exceeding receiver tank composition limits. This form is not as concentrated as DSS.

Non-complexed (NCPLX)

General waste term applied to all Hanford Site (NCPLX) liquors not identified as complexed.

PUREX Decladding (PD)

PUREX Neutralized Cladding Removal Waste (NCRW) is the solids portion of the PUREX plant neutralized cladding removal waste stream; received in Tank Farms as a slurry. NCRW solids are classified as transuranic (TRU) waste.

Drainable Interstitial Liquid (DIL)

Interstitial liquid that is not held in place by capillary forces, and will therefore migrate or move by gravity. (See also Section 4 below)

Supernate

The liquid above the solids or in large liquid pools covered by floating solids in waste storage tanks. (See also Section 4 below)

Ferrocyanide

A compound of iron and cyanide commonly expressed as FeCN. The actual formula for the ferrocyanide anion is $[Fe(CN)_6]^{-4}$.

INTERIM STABILIZATION (Single-Shell Tanks only)

Interim Stabilized (IS)

A tank which contains less than 50 Kgallons of drainable interstitial liquid and less than 5 Kgallons of supernatant liquid. If the tank was jet pumped to achieve interim stabilization, then the jet pump flow or saltwell screen inflow must also have been at or below 0.05 gpm before interim stabilization criteria is met.

Jet Pump

The jet pump system includes 1) a jet assembly with foot valve mounted to the base of two pipes that extend from the top of the well to near the bottom of the well casing inside the saltwell screen, 2) a centrifugal pump to supply power fluid to the down-hole jet assembly, 3) flexible or rigid transfer jumpers, 4) a flush line, and 5) a flowmeter. The jumpers contain piping, valves, and pressure and limit switches.

The centrifugal pump and jet assembly are needed to pump the interstitial liquid from the saltwell screen into the pump pit, nominally a 40-foot elevation rise. The power fluid passes through a nozzle in the jet assembly and acts to convert fluid pressure head to velocity head, thereby reducing the pressure in the jet assembly chamber. The reduction in pressure allows the interstitial liquid to enter the jet assembly chamber and mix with the power fluid. Velocity head is converted to pressure head above the nozzle, lifting power fluid, and interstitial liquid to the pump pit. Pumping rates vary from 0.05 gallons to about 4 gpm.

Saltwell Screen

The saltwell system is a 10-inch diameter saltwell casing consisting of a stainless steel saltwell screen welded to a Schedule 40 carbon steel pipe. The casing and screen are to be inserted into the 12-inch tank riser located in the pump pit. The stainless steel screen portion of the system will extend through the tank waste to near the bottom of the tank. The saltwell screen portion of the casing is an approximately 10-foot length of 300 Series, 10-inch diameter, stainless steel pipe with screen openings (slots) of 0.05 inches.

Emergency Pumping Trailer

A 45-foot tractor-type trailer is equipped to provide storage space and service facilities for emergency pumping equipment: this consists of two dedicated jet pump jumpers and two jet pumps, piping and dip tubes for each, two submersible pumps and attached piping, and a skid-mounted Weight Factor Instrument Enclosure (WFIE) with an air compressor and electronic recording instruments. The skid also contains a power control station for the pumps, pump pit leak detection, and instrumentation. A rack for over 100 feet of overground double-contained piping is also in the trailer.

INTRUSION PREVENTION (ISOLATION) Single-Shell Tanks only

Partially Interim Isolated (PI)

The administrative designation reflecting the completion of the physical effort required for Interim Isolation except for isolation of risers and piping that is required for jet pumping or for other methods of stabilization.

Interim Isolated (II)

The administrative designation reflecting the completion of the physical effort required to minimize the addition of liquids into an inactive storage tank, process vault, sump, catch tank, or diversion box. In June 1993, Interim Isolation was replaced by Intrusion Prevention.

Intrusion Prevention (IP)

Intrusion Prevention is the administrative designation reflecting the completion of the physical effort required to minimize the addition of liquids into an inactive storage tank, process vault, sump, catch tank, or diversion box. Under no circumstances are electrical or instrumentation devices disconnected or disabled during the intrusion prevention process (with the exception of the electrical pump).

Controlled, Clean, and Stable (CCS)

Controlled, Clean, and Stable reflects the completion of several objectives: "Controlled" - provide remote monitoring for required instrumentation and implement controls required in the TWRS Authorization Basis; "Clean" - remove surface soil contamination and downpost the Tank Farms to RBA/URMA/RA radiological control status, remove abandoned equipment, and place reusable equipment in compliant storage; and "Stable" - remove pumpable liquids from the SSTs and IMUSTs and isolate the tanks.

TANK INTEGRITY

Sound

The integrity classification of a waste storage tank for which surveillance data indicate no loss of liquid attributed to a breach of integrity.

Assumed Leaker

The integrity classification of a waste storage tank for which surveillance data indicate a loss of liquid attributed to a breach of integrity.

Assumed Re-Leaker

A condition that exists after a tank has been declared as an "assumed leaker" and then the surveillance data indicates a new loss of liquid attributed to a breach of integrity.

TANK INVESTIGATION

Intrusion

A term used to describe the infiltration of liquid into a waste tank.

SURVEILLANCE INSTRUMENTATION

Drywells

Drywells are vertical boreholes with 6-inch (internal diameter) carbon steel casings positioned radially around SSTs. These wells range between 50 and 250 feet in depth, and are monitored between the range of 50 to 150 feet. The wells are sealed when not in use. They are called drywells because they do not penetrate to the water table and are therefore usually "dry." There are 759 drywells.

Laterals

Laterals are horizontal drywells positioned under single-shell waste storage tanks to detect radionuclides in the soil which could be indicative of tank leakage. These drywells can be monitored by radiation detection probes. Laterals are 4-inch inside diameter steel pipes located 8 to 10 feet below the tank's concrete base. There are three laterals per tank. Laterals are located only in A and SX farms. There are currently no functioning laterals and no plan to prepare them for use.

Surface Levels

The surface level measurements in all waste storage tanks are monitored by manual or automatic conductivity probes, and recorded and transmitted or entered into the Surveillance Analysis Computer System (SACS).

Automatic FIC

An automatic waste surface level measurement device is manufactured by the Food Instrument Company (FIC). The instrument consists of a conductivity electrode (plummet) connected to a calibrated steel tape, a steel tape reel housing and a controller that automatically raises and lowers the plummet to obtain a waste surface level reading. The controller can provide a digital display of the data and until February 1999, the majority of the FICs transmitted readings to the CASS. Since CASS retirement, all FIC gauges are read manually. FICs are being replaced by ENRAF detectors (see below).

ENRAF 854 ATG Level Detector

FICs and some manual tapes are in the process of being replaced by the ENRAF ATG 854 level detector. The ENRAF gauge, fabricated by ENRAF Incorporated, determines waste level by detecting variations in the weight of a displacer suspended in the tank waste. The displacer is connected to a wire wound onto a precision measuring drum. A level causes a change in the weight of the displacer which will be detected by the force transducer. Electronics within the gauge causes the servo motor to adjust the position of the displacer and compute the tank level based on the new position of the displacer drum. The gauge displays the level in decimal inches. The first few ENRAFs that received remote reading capability transmit liquid level data via analog output to the Tank Monitor and Control System (TMACS). The remaining ENRAFs and future installations will transmit digital level data to TMACS via an ENRAF Computer Interface Unit (CIU). The CIU allows fully remote communication with the gauge, minimizing tank farm entry.

Annulus

The annulus is the space between the inner and outer shells on DSTs only. Drain channels in the insulating and/or supporting concrete carry any leakage to the annulus space where conductivity probes are installed. The annulus conductivity probes and radiation detectors are the primary means of leak detection for all DSTs.

Liquid Observation Well (LOW)

In-tank liquid observation wells are used for monitoring the interstitial liquid level (ILL) in single-shell waste storage tanks. The wells are usually constructed of fiberglass or TEFZEL-reinforced epoxy-polyester resin (TEFZEL, a trademark of E. I. du Pont de Nemours & Company). There are a few LOWs constructed of steel. LOWs are sized to extend to within 1 inch of the bottom of the waste tank, are sealed at their bottom ends and have a nominal outside diameter of 3.5 inches. Two probes are used to monitor changes in the ILL; gamma and neutron, which can indicate intrusions or leakage by increases or decreases in the ILL. There are 65 LOWs (64 are in operation) installed in SSTs that contain or are capable of containing greater than 50 Kgallons of drainable interstitial liquid, and in two DSTs only. The LOWs installed in two DSTs, (SY-102 and AW-103 tanks), are used for special, rather than routine, surveillance purposes only.

Thermocouple (TC)

A thermocouple is a thermoelectric device used to measure temperature. More than one thermocouple on a device (probe) is called a thermocouple tree. In DSTs there may be one or more thermocouple trees in risers in the primary tank. In addition, in DSTs only, there are thermocouple elements installed in the insulating concrete, the lower primary tank knuckle, the secondary tank concrete foundation, and in the outer structural concrete.

These monitor temperature gradients within the concrete walls, bottom of the tank, and the domes. In SSTs, one or more thermocouples may be installed directly in a tank, although some SSTs do not have any trees installed. A single thermocouple (probe) may be installed in a riser, or lowered down an existing riser or LOW. There are also four thermocouple laterals beneath Tank 105-A in which temperature readings are taken in 34 thermocouples.

In-tank Photographs and Videos

In-tank photographs and videos may be taken to aid in resolving in-tank measurement anomalies and determine tank integrity. Photographs and videos help determine sludge and liquid levels by visual examination.

TERMS/ACRONYMS

CCS	Controlled, Clean and Stable (tank farms)
FSAR	Final Safety Analysis Report (replaces BIOS, effective October 18, 1999)
II	Interim Isolated
IP	Intrusion Prevention Completed
IS	Interim Stabilized

MT/FIC/ENRAF Manual Tape, Food Instrument Corporation, ENRAF Corporation (surface level measurement devices)

OSD Operating Specifications Document

PI Partial Interim Isolated

SAR Safety Analysis Reports

SHMS Standard Hydrogen Monitoring System

TMACS Tank Monitor and Control System

TPA Hanford Federal Facility Consent and Compliance Order, "Washington State Department of Ecology, U. S. Environmental Protection Agency, and U. S. Department of Energy," Fourth Amendment, 1994 (Tri-Party Agreement)

USQ Unreviewed Safety Question

Wyden Amendment "Safety Measures for Waste Tanks at Hanford Nuclear Reservation," Section 3137 of the National Defense Authorization Act for Fiscal Year 1991, November 5, 1990, Public Law 101-510.

3. INVENTORY AND STATUS BY TANK - COLUMN VOLUME CALCULATIONS AND DEFINITIONS FOR TABLE A-6 (SINGLE-SHELL TANKS)

COLUMN HEADING	COLUMN VOLUME CALCULATIONS (Underlined)/DEFINITIONS
Total Waste	Solids volume plus Supernatant liquid. Solids include sludge and saltcake (see definitions below).
Supernate (1)	May be either measured or estimated. Supernate is either the estimated or measured liquid floating on the surface of the waste or under a floating solids crust. In-tank photographs or videos are useful in estimating the liquid volumes; liquid floating on solids and core sample data are useful in estimating large liquid pools under a floating crust.
Drainable Interstitial Liquid (DIL) (1)	This is initially calculated. Drainable interstitial liquid is calculated based on the saltcake and sludge volumes, using calculated porosity values from past pumping or actual data for each tank. Interstitial liquid is liquid that fills the interstitial spaces of the solids waste. The sum of the interstitial liquid contained in saltcake and sludge minus an adjustment for capillary height is the initial volume of drainable interstitial liquid.
Pumped This Month	Net total gallons of liquid pumped from the tank during the month. If supernate is present, pump production is first subtracted from the supernatant volume. The remainder is then subtracted from the drainable interstitial liquid volume.
Total Pumped (1)	Cumulative net total gallons of liquid pumped from 1979 to date.
Drainable Liquid Remaining (DLR) (1)	Supernate plus Drainable Interstitial Liquid. The total Drainable Liquid Remaining is the sum of drainable interstitial liquid and supernate.

COLUMN HEADING	COLUMN VOLUME CALCULATIONS (Underlined)/DEFINITIONS
Pumpable Liquid Remaining (PLR) (1)	Drainable Liquid Remaining minus unpumpable volume. Not all drainable interstitial liquid is pumpable.
Sludge	Solids formed during sodium hydroxide additions to waste. Sludge usually was in the form of suspended solids when the waste was originally received in the tank from the waste generator. In-tank photographs or videos may be used to estimate the volume.
Saltcake	Results from crystallization and precipitation after concentration of liquid waste, usually in an evaporator. If saltcake is layered over sludge, it is only possible to measure total solids volume. In-tank photographs or videos may be used to estimate the saltcake volume.
Solids Volume Update	Indicates the latest update of any change in the solids volume.
Solids Update Source - See Footnote	Indicates the source or basis of the latest solids volume update.
Last In-tank Photo	Date of last in-tank photographs taken.
Last In-tank Video	Date of last in-tank video taken.
See Footnotes for These Changes	Indicates any change made the previous month. A footnote explanation for the change follows the Inventory and Status by Tank Appendix (Table E-6).

(1) As pumping continues, supernate, DIL, DLR, PLR, and total gallons pumped are adjusted accordingly based on actual pump volumes.

APPENDIX I

TANK FARM CONFIGURATION, STATUS AND FACILITY CHARTS

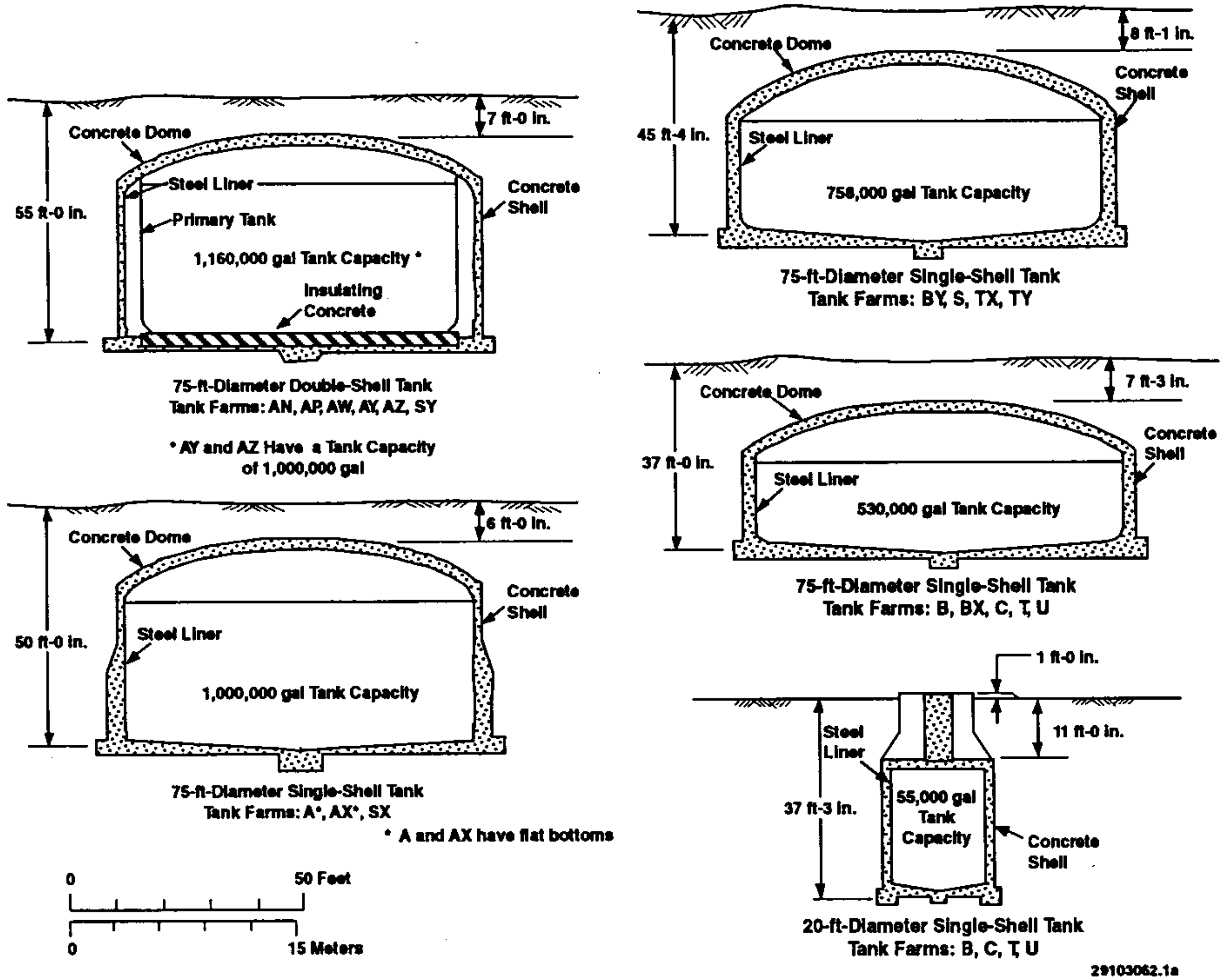


FIGURE I-1. HIGH-LEVEL WASTE TANK CONFIGURATION

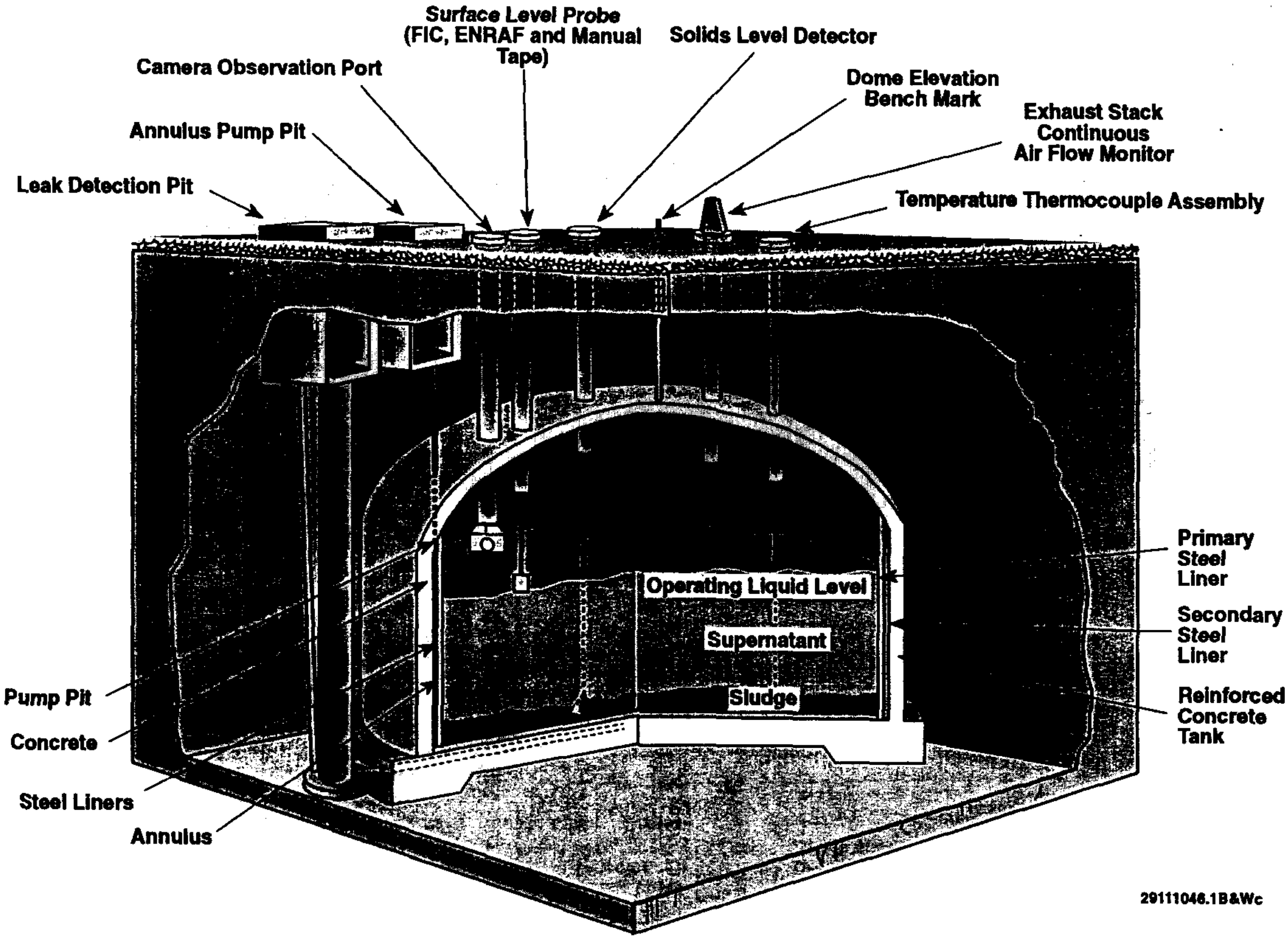


FIGURE I-2. DOUBLE-SHELL TANK INSTRUMENTATION CONFIGURATION

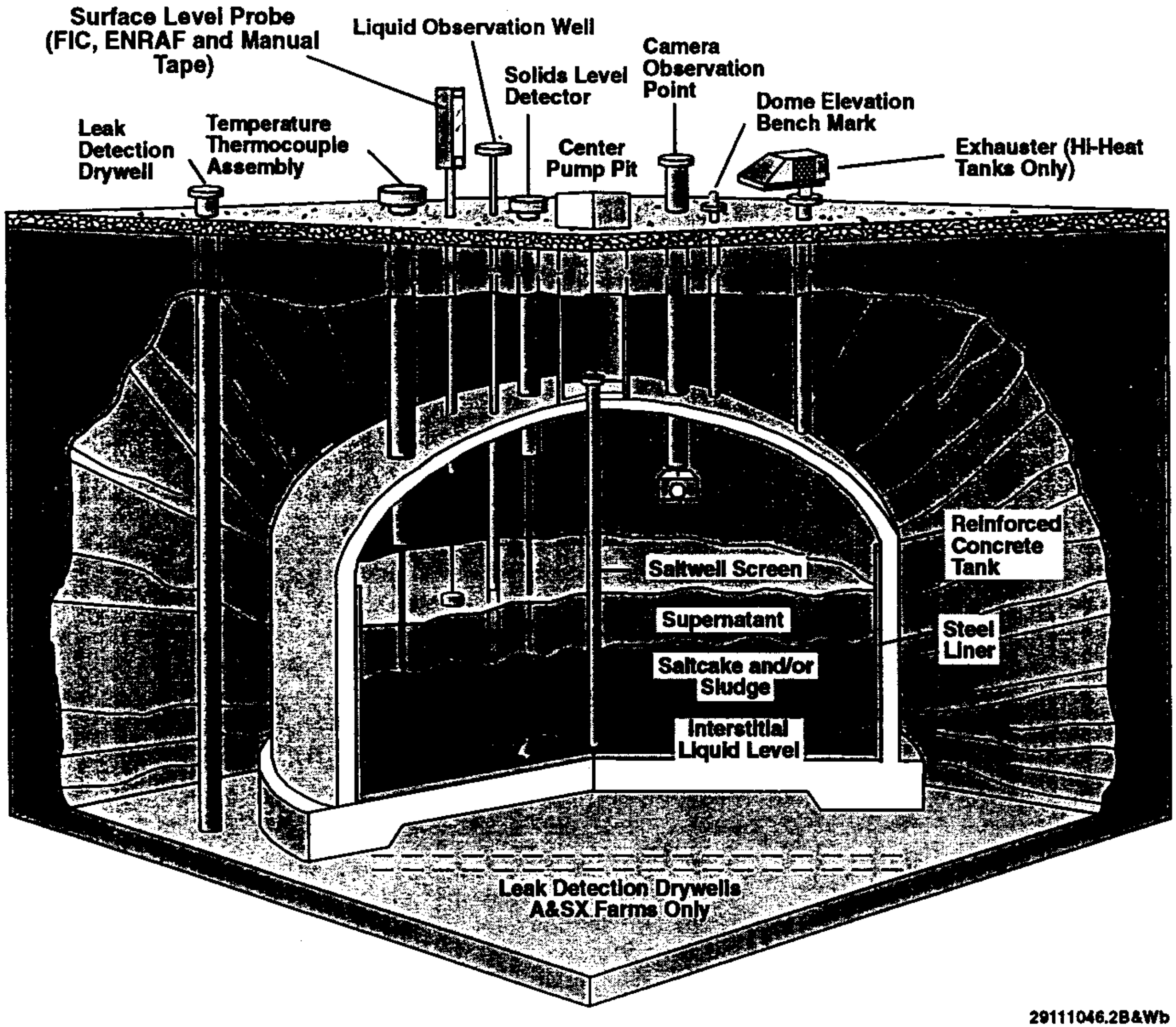


FIGURE I-3. SINGLE-SHELL TANK INSTRUMENTATION CONFIGURATION

THE TANK FARM FACILITIES CHARTS (colored foldouts)

ARE ONLY BEING INCLUDED IN THIS REPORT ON A QUARTERLY BASIS

(i.e., months ending March 31, June 30, September 30, December 31)

NOTE: COPIES OF THE FACILITIES CHARTS CAN BE OBTAINED

FROM DENNIS BRUNSON, LMSI MULTI-MEDIA SERVICES

376-2345, G3-51

ALMOST ANY SIZE IS AVAILABLE, AND CAN BE LAMINATED

P-Card required

DISTRIBUTION

Number of copies

OFFSITE - USA

2 **Congress of the United States**
U. S. Senate
717 Hart Senate Building
Washington D.C. 20510

Senator Ron Wyden

U. S. House of Representatives
1323 Longworth House Office Building
Washington D. C. 20515

Congressman Richard "Doc" Hastings, 4th District
Atten: Jeff Markey

4 **U. S. Department of Energy-Headquarters**
1000 Independence Avenue, SW
Washington, D. C. 20585

H. Calley	EM-38	Cloverleaf Bldg.
Willam M. Levitan	EM-1	FORS/5A-014

U. S. Department of Engergy-Headquarters
19901 Germantown Rd
Germantown, MD 20874

Kurt Juroff	EM-44
Ralph Lightener	EM-44

1 **U. S. Nuclear Regulatory Commission**
Division of Fuel Cycle, Safeguards & Security
Mail Stop T8-A33
Washington, DC 20555

Robert Pierson, Chief FSPB/FCSS (ADDRESSEE ONLY)

2 **Washington State Department of Ecology**
Nuclear & Mixed Waste Management Program
P.O. Box 47600
Olympia, WA 98504-7600

Library

Washington State Department of Ecology
Nuclear Waste Program
300 Desmond Drive
Lacey, WA 98504

R. Stanley

1 **Washington State Department of Health**
Radiation Protection
7171 Cleanwater Lane
P. O. Box 47827
Olympia, WA 98504-7827

Allen W. Conklin

1 **Oregon State Department of Energy**
625 Marion St. NE, Suite 1
Salem, OR 97301

Dirk Dunning
Do not remove from distribution without permission from ODOE

1 **Oak Ridge National Laboratory**
P. O. Box 2008
Oak Ridge, TN 37831-6180

C. Forsberg MS-6180

1 Donald T. Oakley
9612 Hall Road
Potomac, MD 20854

1 **Foster-Miller, Inc.**
Power Systems Technology Group
350 Second Avenue
Waltham, MA 02451-1196

Maureen Williams

TRI-CITIES:

1 **ARES Corporation**
636 Jadwin Ave., Suite B
Richland, WA 99352

1 **Babad Technical Services**
2540 Cordoba Court
Richland, WA 99352

1 **Wastren Inc.**
1050 Gilmore Ave, Suite C
Richland, WA 99352

Gary Dunford

ONSITE

1 **BAT**
R. T. Winward H6-60

1 **MACTEC - ERS**
J. F. Bertsch B1-42

1	**General Accounting Office**	
	C. R. Abraham	A1-80
2	**Washington State Department of Ecology**	
	K. E. DeWitt	B5-18
	Library	B5-18
1	**U. S. Environmental Protection Agency**	
	D. R. Sherwood	B5-01
22	**U. S. Department of Energy**	
	W. Abdul	H6-60
	H. L. Boston	H6-60
	D. C. Bryson	H6-60
	J. M. Clark	H6-60
	J. J. Davis	H6-60
	B. A. Harkins	H6-60
	R. G. Harwood	H6-60
	R. D. Hildebrand	A5-13
	D. H. Irby	H6-60
	G. M. Neath	H6-60
	Wen-Shou Liou	H6-60
	J. Polehn	A4-70
	C. Pacheco	H6-60
	S. H. Pfaff	H6-60
	M. L. Ramsay	H6-60
	M. J. Royack	H6-60
	J. S. Shuen	H6-60
	A. B. Sidpara	H6-60
	H. J. Stafford, Jr.	H6-60
	D. J. Williams	H6-60
	D. D. Wodrich	H6-60
	Reading Room	H2-53
5	**Pacific National Northwest Laboratories**	
	J. A. Dirks	K8-17
	R. E. Gephart	K9-76
	D.G. Horton	K6-81
	J. L. Huckaby	K7-15
	B. E. Opitz	K6-75
119	**CH2M Hill (CHG), and Affiliated Companies**	
	D. I. Allen	S5-07
	J. J. Badden	T4-08
	D. G. Baide	R3-72
	H. L. Baune	R2-12
	L. Bedford	R2-84
	T. M. Blaak	S5-13
	V. C. Boyles	R2-11
	D. M. Brooks	H4-20
	K. B. Bryan	R2-58
	D. W. Burbank	H4-02
	J. W. Cammann	T4-08
	K. G. Carothers	R2-11

R. J. Cash		R1-44
C. Defigh-Price		T4-08
D. K. DeFord		S7-24
B. T. Dehn		R2-50
M. P. Delozier		H6-08
M. L. Dexter	(12)	R1-51
W. T. Dixon		R1-51
R. A. Dodd		S5-07
A. C. Etheridge		H6-04
S. D. Estey		R2-11
J. G. Field		R2-12
B. A. Flores		S8-09
L. A. Fort		R2-12
K. D. Fowler		R2-11
G. T. Frater		T4-08
J. R. Freeman-Pollard		R1-52
J. S. Garfield		R3-73
K. A. Gasper		H4-02
B. C. Gooding		T4-01
R. D. Gustavson		R3-83
B. M. Hanlon	(10)	R3-72
D.C. Hedengren		R2-11
B. A. Higley		R3-73
K. M. Hodgson		R2-11
T. M. Hohl		R3-73
P. R. Hopkins		R2-58
J. W. Hunt		R2-12
S. E. Hulsey		S7-86
O. M. Jaka		S7-24
L. E. Janin		H3-27
B. A. Johnson		S7-02
J. D. Johnson		H4-20
T. E. Jones		HO-22
J. Kalia		R1-43
M. R. Kembel		S7-03
R. A. Kirkbride		R3-73
P. F. Kison		T4-07
N. W. Kirch		R2-11
J. S. Konyu		R3-27
J. G. Kristofzski		R2-50
C.E. Leach		R1-44
J. A. Lechelt		R2-11
G. T. MacLean		G3-10
J. M. Morris		R2-84
P. Ohl		H4-02
A. M. Parker		H6-63
D. L. Parker		R3-75
M. A. Payne		H6-63
R. E. Pohto		R2-84
J. G. Propson		R1-43
R. E. Raymond	(2)	T4-08
D. S. Rewinkel		S4-45
J. J. Rice		R2-53
B. E. Ross		S7-83
K. Sathyanarayana		L6-35
R. D. Schreiber		B2-05
E. B. Schwenk, Jr.		H3-28
N. J. Scott-Proctor		S5-01

P. P. Sederburg		R2-50
M. L. Sheriff		S5-03
G.A. Stanton		R2-12
W. J. Stokes		T4-08
J. N. Strode		R2-11
D. D. Taylor		H6-64
R. R. Thompson		T4-08
D. T. Vladimiroff		S7-20
J. A. Voogd		H6-19
A. E. Young	(10)	R1-10
Central Files		B1-07
200 West Shift Office		T4-00
200 East Shift Office		S5-04
Environmental Data Mgmt Center	(2)	H6-08
Unified Dose Assessment Center (UDAC)		A0-20
Document Processing Center		A3-94